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# SEMANTIC CONTRIBUTION OF LEXICOSTATISTICS

A. L. KROEBER†

**0.** [Obituary, by the editor of IJAL]
**1.** Preface
**2.** Number of stems per item of meaning
**3.** Variation in word classes
**4.** Comparison with Athabascan
**5.** Comparisons of retention rate of individual meanings
**6.** Indo-European and Mon-Khmer
**7.** Discussion
**8.** A program

**0.** [Though Kroeber had not yet returned from Europe, we sent an editorial note to his Berkeley home, asking him to restore the original title of his paper when he received galley proof, if he did not agree with us that the reader's attention is generally directed, in this paper, to the 'Semantic contribution of lexicostatistics' rather than being restricted to the 'Semantic contribution of Yokuts to lexicostatistics'. We now know that Kroeber will not read galley on this paper. A weak statement of this order is about the only negative thing we can say about the teacher and friend and counselor of us all, since we have good reason to know that, as he grew older, he avoided what was negative and stood for what was positive. Now, as the editors see this paper through the press, unaided and uncheered by the author, they are indeed bereft. If it is for youth to launch new ideas and see fresh vistas, then the paper which follows is an example, and the man who wrote it an exemplar of what is young and vistaful.]

**1.** Early in 1906 I made a dialect survey of the Yokuts language, recording what I could secure of forms for some 300 English items in 21 local (tribal) variants. On this body of material I based two sections of Part III of my 1907 The Yokuts Languages, of which Part I consisted of an outline of the structure of Yawdanchi and Part II of a briefer account of Yawelmani, but Part III consisted first of a classification of Yokuts dialects, and second of comparative grammatical notes and scraps of text.

I did not then publish the several thousand Yokuts forms recorded in the 21 dialects, save for a two-page sample. Of late, however, with increasing pressure to institute intra-Penutian and extra-Penutian comparisons, it seemed desirable to render the data available. Newman's grammar of 1944 is modern in every regard and standard. Phonetically and phonemically it is far superior to my data, and thereby presents a touchstone for correcting my forms. But Newman was oriented toward structure and did not systematically follow up the pursuit of lexicon. Also, when he did his collecting in 1930 and 1931, he was able to find adequate speaker-informants for only six of the dialects on which I had secured vocabularies.

I have therefore prepared a monograph presenting my data in full, the vocabularies being listed for convenience of comparison in tabular columns except when less than eleven forms were secured, in which case the forms are enumerated in solid paragraphs. A monograph of this sort must secure the approval of a departmental and a University board of editors before it can be passed to print, competitive bids must then be secured on its manufacture, after which follows the slow and sometimes delayed composition and correction; and experience has shown that the total process always requires two years for a monograph

of this type, and sometimes three, between submission and issue.

While the comparers of Penutian are waiting for the additional Yokuts forms, I am outlining here certain findings of a general nature which eventuated as the work of assembly and ordering was being done, and which will be substantiated when the full data finally appear. These findings are semantically tinged and concern the effect of word classes on displacement of cognate stems by noncognates of the same meaning—a matter obviously of fundamental concern to the process of lexicostatistical (glottochronological) inquiry.

**2.** The Yokuts dialects in the nineteenth century occupied a solid block of territory in the San Joaquin Valley, and apparently had largely remained in contact with one another for 1500 or so years preceding, and perhaps considerably longer. They have therefore retained considerable pervasive similarity. There are no marked clefts within the family. And most cognates have not been worn down by phonetic attrition to markedly dissimilar form. A more marked process working for differentiation in Yokuts has been the substitution or replacement of cognates by new stems—sometimes called morpheme 'decay,' but 'displacement' or 'replacement' is more exact. On this point, I already had some remarks in 1907 (The Yokuts Language, 2: 322–324), but have now developed them in detail. Their relevance to the assumptions underlying glottochronology will be obvious.

The vocabularies yield 211 items for each of which the number of different Yokuts stems is reasonably certain on inspection alone. The number of stems per meaning item runs from 1 to 8. Thus, *seven* and *eye* are each represented in Yokuts by 21 cognate forms, but for *ghost* 8 seemingly separate stems were given. The items represented by a single stem are the most numerous. The following gives some idea of the degree of differentiation:

| | |
|---|---|
| 1 stem | 65 items |
| 2 stems | 55 |
| 3 | 36 |
| 4 | 30 |
| 5 | 18 |
| 6 | 2 |
| 7 | 4 |
| 8 | 1 |
| | 211 |

There are 42 other items or meaning slots for which the number of Yokuts stems cannot be safely judged by inspection alone, in the absence of a reconstructed proto-Yokuts—and such a reconstruction may be difficult and not too meaningful for 21 not too differentiated dialects.

| | |
|---|---|
| 2 stems or 1 | 7 items |
| 3 or 2 | 9 |
| 4 or 3 | 19 |
| 5 or 4 | 5 |
| 6 or 5 | 1 |
| 7 or 6 | 1 |
| | 42 |

Any of these 42 may conceivably fall into the preceding group of fewer stems or the succeeding group of more. Leaning toward conservatism, I have provisionally counted such stems as separate until they can be proved cognate, which raises the total numbers for 1 to 8 stems to respectively 65, 62, 45, 49, 23, 3, 5, 1. (If the 42 doubtfuls had been counted the other way, namely as cognate, the frequencies would have had a more expectable distribution, namely 72, 64, 55, 35, 19, 3, 4, 1. I suspect, both for this reason and from the residual impression of 42 appraisals, that the majority of the doubtfuls will ultimately turn out to be cognates; but for present provisional use, I have adjudged them noncognate.

**3.** Next I divided the 253 meaning slots into a dozen classes.

(Nouns): Persons, Body, Animals, Plants, Nature, Artifacts.

(Others): Verbs, Adjectives, Adverbs, Numerals, Directions, Interrogatives. (The class 'adjective' has no reference to whether the Yokuts term for *red* or *large* is grammatically an adjective, noun, verb, or particle. It includes all Yokuts forms elicited as the nearest semantic equivalents of English *red* or *large*. This may seem ethnocentrically arbitrary, but is virtually inescapable under the list method of data collecting, especially since most of the dialects have become extinct since the vocabularies were recorded.)

Next, within each class, I added up the total number of stems, divided this by the number of items, and then rank-ordered the classes. If every item in the class was represented by only one stem, the quotient would of course be 1.0; if there were an equal number of items represented by 1, 2, 3, and 4 separate stems, the quotient would be 2.5.

The rank orders came out as follows:

| | |
|---|---|
| Interrogatives (4 items) | 1.0 |
| Count (13) | 1.5 |
| Plants (16) | 2.3 |
| Body (51) | 2.6 |
| Animals (70) | 2.6 |
| Adverbs (7) | 3.1 |
| Artifacts (19) | 3.2 |
| Directions (4) | 3.3 |
| Nature (29) | 3.3 |
| Persons (15) | 3.8 |
| Adjectives (16) | 3.9 |
| Verbs (9) | 4.0 |

These quotients fall into four evident groups:

I. Interrogatives, Numerals: 10–1.5: the longest-lived stems.

II. Plants, Animals, Body: 2.3–2.6.

III Adverbs, Directions; Artifacts, Nature: 3.1–3.3.

IV. Persons, Adjectives, Verbs: 3.8–4.0: the shortest-lived stems.

With a body of data the size of this one—253 items of meaning and 21 dialects—I think it cannot be denied that there are very considerable differences between Yokuts word classes in the relative length of life of their stems.

**4.** The next step is to examine some other languages, to see to what degree the same situation may or may not hold there.

At this writing Hoijer has in press a glottochronological reclassification of Athabascan on the basis of a list of 100 items (almost free of gaps) in 24 languages of the family; and with cognate recognition strengthened by proven correspondences of prevocalic stopped consonants. On the request of H. A. Gleason, Jr., he furnished him an abstracted summary of his data, in which all cognate forms of one meaning are represented simply by a letter. Thus *big* is rendered in all 24 Athabascan languages and dialects by variants of one stem; in short, *big* in this summary is followed by 24 A's. But (*tree*) *bark* is expressed by no less than 12 different stems in the 24 languages, so it is represented by the letters A, B, E, F, G-N in varying frequencies: A 7, B 2, E 4, F 2, G-N 1 each. Hoijer very kindly gave me a copy of the tabulation he made for Gleason so I might compare Athabascan with Yokuts. I do not know the problem that Gleason is working on, but it is perhaps not far removed from mine, though starting from a different body of material.

Many of my dozen Yokuts word classes are represented in Athabascan by rather different frequencies of items. Nevertheless, there is manifest a general tendency for the stems/items index to be respectively high and low in the same classes. Here is the comparison, following the Yokuts rank order.

| | YOK. | ATH. |
|---|---|---|
| Interrogatives (4 —) | (1.0) | |
| Pronouns (— 3) | | (1.9) |
| Demonstratives (— 2) | | (4.2) |
| Numerals (13 4) | 1.5 | (1.25) |
| Plants (16 4) | 2.3 | (4.3) |
| Animals (70 4) | 2.6 | (3.2) |
| Body (51 25) | 2.6 | 2.7 |
| Adverbs (7 —) | 3.1 | |
| Artifacts (19 2) | 3.2 | (2.0) |
| Nature (29 17) | 3.3 | 4.1 |
| Persons (15 2) | 3.8 | (5.7) |
| Adjectives (16 15) | 3.9 | 4.7 |
| Verbs (9 22) | 4.0 | 3.4 |
| All classes: stems | <696 | <346 |
| items | 253 | 100 |
| ratio | 2.75 | 3.46 |

Ratios based on five or fewer items are in parentheses.

There are more stems per item in Athabascan, which expresses the fact that the Athabascan languages have undergone somewhat more change in diverging from proto-Athabascan than the Yokuts languages from proto-Yokuts. This may be because the Athabascan divergence began earlier; or again because the Athabascan languages spread over a very much larger territory (including three wholly separated areas); or both. The differentiation however is not very much greater, as shown by the fact that Athabascan shows 3.46 stems per meaning slot as against 2.75 for Yokuts, with a slightly greater number of languages represented in our sample: 24 as against 21. (On deduction of one-eighth from 3.46, the stem/item rate becomes 3.03 against 2.75 in equivalent number of languages.) These general facts are mentioned to make clear that the total situation in the two families is similar enough to warrant comparison.

The greatest difference in the two sets of figures is due to differences in the two sets of lists used. These differences in turn result from the fact that my Yokuts vocabularies were built up of terms selected mainly to insure unambiguity of English meaning between illiterate informants and myself, within a compact and uniform territorial area, but that Hoijer's vocabulary is based on Swadesh's second glottochronological list which aims at eliminating all items which might be culturally or geographically determined. Swadesh in short was trying to develop a basic list that was universal; I, one that was specifically adapted to the San Joaquin Valley. The result is that I included 70 animal names, but Swadesh only 4; and somewhat similarly for plants, 16 as against 4. Swadesh, and therefore Hoijer, felt compelled to omit all terms denoting species or even genera (*fox*, *vulture*, *salmon*, *yellow pine*, *manzanita*); their classes of animal and plant terms are restricted to generalizations or recurrent parts (*fish*, *bird*, *tree*, *grass*, *horn*, *tail*, *bark*, *root*). The groups are therefore really non-comparable in content as well as in size.

Other classes are included only by myself (interrogatives, adverbs) or only by Swadesh and Hoijer (pronouns, demonstratives).

What we have left as reasonably comparable are four classes: (1) body parts and products, which with a proportionally nearly even representation (51 terms out of 253, 25 out of 100) come out with nearly even ratios: 2.6 and 2.7; (2) Nature (29 terms against 17), ratios 3.3 versus 4.1; (3) adjectives (16, 15 terms), ratios 3.9 versus 4.7; (4) verbs (9, 22 terms), ratios 4.0 versus 3.4.

It will be seen that where the scope is similar, the Athabascan ratios come out somewhat higher (as indeed they ought to with a total ratio of 2.8 as against 3.5, or 4:5), except for verbs, where alone the Athabascan ratio is lower. This exception may be connected with Hoijer's use of a much higher percentage of verbs: 22% of his total list as against 3.5% in mine. Or the exception may be due to a particular durability peculiar to the Athabascan verb. More word class ratios determined in more

languages will no doubt ultimately answer the question.

**5.** If word classes differ in their resistance or liability to stem replacement within meaning slot, it is conceivable that individual meanings also differ with fair consistence trans-lingually. Hoijer's Athabascan and my Yokuts share 71 identical meanings (with allowance for several near-synonyms like *stomach-belly*, *big-large*, *long-far*, *many-much*, *die-dead*, *say-speak*). For Yokuts, I tabulated these 71 items in five columns, according as they were expressed by 1, 2, 3, 4, and more than 4 stems. The totals for these five categories are not too uneven, namely 20, 15, 11, 16, 9 respectively. For Athabascan, with a greater range of stems, the first two of five corresponding columns were identical, 1 and 2 stems; the three others had to be spread somewhat, and are headed respectively 3–6 = av. 3.7; 3–8 = av. 4.6; and 4–11 = av. 6.9 stems. While the particular limits of these groupings may seem artificially arbitrary, they do fairly express a corresponding grouping of more variable material, and they eventuate also in five classes, along a similar scale, containing approximately equal numbers of cases, namely 19, 14, 15, 11, 12 in Athabascan.

When now we count the frequency of the 71 items in the two language families appearing in the same column or grade, or one column or grade apart, or two or three or four, we find these differences:

| | |
|---|---|
| 0 grade apart | 22 items |
| 1 | 30 |
| 2 grades apart | 13 |
| 3 | 4 |
| 4 | 2 |

(0 + 1 aggregate 52 = 73% of 71)

This distribution can be summarized by averaging the distance in grades apart: (0 × 22) + (1 × 30) + (2 × 13) + (3 × 4) + (4 × 2) = 76; which, divided by $n = 71$ gives a mean of 1.07 grades apart. If the distribution of the 71 items were wholly concordant in the two families, the distance would of course be 0. If it were wholly random and unrelated, it would be 2.0, assuming the five classes were equal in $n$, which approximately they are. The actual mean of 1.07 being about halfway between 0 of complete correlation and 2.0 of no correlation, it is evident that there is a pretty fair degree of similarity in the behavior even of particular INDIVIDUAL items of meaning as regards long-term stem displacement.

**6.** In 1960, David D. Thomas published Basic Vocabulary in some Mon-Khmer Languages (AL 2, no. 3, pp. 7–11), which compares 8 Mon-Khmer languages with the I-E language data on which Swadesh based the revised retention rate (86%/74%) in place of original (81%–66%), and his revised 100-word basic glottochronological list, in Towards Greater Accuracy . . . (IJAL 21:121–137). Thomas' findings are, first, "that the individual items vary greatly and unpredictably in their persistence"; but, second, "that the semantic groups are surprisingly unvarying in their average persistence" (as between M-K and I-E). His first conclusion, on behavior of individual items, is negative, whereas mine (on Ath. and Yok.) was partially positive. His second conclusion, on semantic word classes, agrees with mine. This second conclusion, independently arrived at by independent study of material from two pairs of language families as different and remote from one another as these four are, cannot be ignored.

Thomas also presents a simple equation for deriving an index of persistence, which weights not only the number of stems ('roots') per meaning, but their relative frequency. Thus his persistence values for some stem frequencies per meaning is: stem identical in 8 languages, 100%; stem frequencies 7 and 1, 86%; stem frequencies 4 and 4, 64%; stem frequencies 4, 3, and 1,

57 %. His formula will have to be weighed, may be altered or improved, and it should be tested on additional bodies of material. But consideration of the frequency of stems per constant meaning seems to be established as having significance in comparative situations with diachronic and classificatory relevance; and Gleason presumably is on the way with a further contribution in this area.

As to relative frequencies of competing roots (7-1 vs. 4-4, etc.), Thomas with his 'weighting' seems to be the first to have considered the significance this might have. The problem needs further exploration. I was at least conscious of the distinction in my full Yokuts presentation that awaits publication, in which, in listing 'Two-Stem Meanings', I set off by asterisks those forms in which *n* of stem B was > *n* of stem A/3, the unasterisked ones standing for A > 3B; or under 'Four Stems', I set off by asterisks cases where the combined *n* of stems B + C + D was > 1/2A.

**7.** These findings, and others which will in time be developed, will affect the method of glottochronological inquiry. If adjectival meanings show relatively low retentiveness of stems, as I am confident will prove to be the case in most languages of the world, why should our basic lists include 15 per cent of these unstable forms, but only 8 per cent of animals and plants which replace much more slowly? Had Hoijer substituted for his 15 adjectival slots 15 good animal and plant items, his rate of stem replacement would have been lower and the age of Athabascan language separation smaller. And irrespective of the outcome in centuries elapsed since splitting, calculations obviously carry more concordant and comparable meaning if they deal with the most stable units than with variously unstable ones.

It is evident that Swadesh has not only had much experience with basic vocabulary in many languages but has acquired great tact and feeling for the expectable behavior of lexical items. Why then this urge to include unstable items in his basic list? It is the urge to obtain a list as free of geographical and cultural conditioning as possible. And why that insistence? It is the hope of attaining a list of items of UNIVERSAL occurrence. But it is becoming increasingly evident that such a hope is a snare. Not that such a list cannot be constructed; but the nearer it comes to attaining universality, the less significant will it be linguistically. Its terms will tend to be labile or vague, and they will fit actual languages more and more badly.

The practical operational problem of lexicostatistics is the establishment of a basic list of items of meaning against which the particular forms or terms of languages can be matched as the medium of comparison. The most important quality of the meanings is that they should be as definable as possible. In proportion as meanings are concrete, we can better rely on their being insulated and distinctive. An elephant or a fox or a swan or a cocopalm or a banana possess in unusually high degree this quality of obvious, common-sense, indubitable IDENTITY, as do an eye or tooth or nail. They isolate out easily, naturally, and unambiguously from the continuum of nature and existence; and they should be given priority in the basic list as long as they continue to show these qualities.

With the universal list as his weapon, Swadesh has extended his march of conquest farther and farther into the past, eight, ten, twelve millennia back. And he has proclaimed greater or less affiliation between all Western hemisphere languages. Some of this may prove to be true, or even considerable of it, whether by genetic ramification or by diffusion and coalescence. But the farther out he moves, the thinner will be his hold on conclusive evidence, and the larger the speculative component in his inferences. He has traversed provinces and kingdoms, but he has not consolidated them

behind him, nor does he control them. He has announced results on Hokan, Penutian, Uto-Aztecan, and almost all other American families and phyla, and has diagrammed their degree of interrelation; but he has not worked out by lexicostatistics one comprehensively complete classification of even a single family other than Salish. That is his privilege. The remote, cloudy, possible has values of its own—values of scope, stimulus, potential, and imagination. But there is also a firm aspect to lexicostatistics: the aspect of learning the internal organization of obvious natural genetic groups of languages as well as their more remote and elusive external links; of classification first, with elapsed age merely a by-product; of acquiring evidential knowledge of what happened in Athabascan, in Yokuts, in Uto-Aztecan in the last few thousand years as well as forecasting what more anciently may have happened between them. This involves step-by-step progress, and such will have to be the day-by-day work of lexicostatistics as a growing body of scientific inquiry. If of the founders of glottochronology Swadesh has escaped our steady plodding, and Lees has repudiated his own share in the founding, that is no reason why we should swerve.

**8.** There is no apparent reason why we should feel bound by Swadesh's rules and procedure since his predilections and aims have grown so vast. It seems time to consider a revision of operational procedures for lexicostatistic studies on a more humble, solid, and limited basis.

I would propose, first, an abandonment of attempts at a universal lexical list, as intrinsically unachievable, and operationally inadequate in proportion as it is achieved.

I would propose, next, as the prime requirement for constitution of new basic lists, items whose forms show as high an empirical retention rate as possible. There would be no conceivable sense in going to the opposite extreme of selecting items whose forms are the most unstable. An attempted middle course might lead to devices like a 5000-word alphabetized dictionary from which every fiftieth word was selected. This would yield a random sample, but probably also a randomly poor one and difficult to work with. If we operate only with the 'best' (most stable, retentive) items, similarities and differences in ascertained retentiveness would assume maximum significance.

Culture-bound items are scarcely a real problem. No one compiling a BASIC list for comparative purposes would include items like *stethoscope* or *oxide* or *atlatl*. Kinship, with its always imposed but variable classification, is perhaps the most culture-bound area of all; perhaps that is why, other than *father* and *mother*, kinship items have played so small a role in lexicostatistics. It is different with flora and fauna, which are drastically bound to temperature and continent, but which, within each climatic region, seem to show high retentiveness for most genera.

Here I recommend using in each region the terms that prove productive, and trusting that—or testing whether—corresponding items will yield similar retentions—*wolf* and *bear* and *puma* behaving much like *lion* and *leopard* and *hyena*, *bison* like *buffalo*, *deer* like *antelopes*, *pines* like *palms*. In this way, Athabascan, Algonkin, Penutian, Hokan, Uto-Aztecan could be compared with one another on identical items of flora and fauna, and then this temperate American group be compared—if it proves necessary to go that far—against tropical American or African groups of languages on the basis of relative retention of presumably equivalent though different items of flora and fauna. Some minor inaccuracy of results might eventuate on the second step, but the degree of slip could be determined and allowed for.

Even if this device for world-wide comparison did not work out too well, we should

then at least have in hand more reliable inferences from better data on a large regional or continental basis about indubitable or provable relationships—which in the nature of things should underlie, or at least precede, the more remote and dubious relations.

With a reconstructed list, new retention rates might eventuate. Extant computations would in that case be superseded—justifiably so, if the new rates were sounder. There might then be less stress on time lapses, and more on classification, on degree of relatedness; which is the basic consideration. True, there is an irresistible lure when it seems we are about to be able to answer 'how old?' But we have really added very little to knowledge by computing that entities X and Y diverged so and so many thousands of years ago when we are not yet clear as to the interrelation of the parts of X or of the parts of Y, and therefore X and Y are but hazy entities.

In short we have moved too far and too fast, skipping over time-consuming consolidation of coherent knowledge in favor of sensational approximations to distant intersections of hazy orbits. It is well to remember that while the germinal idea was that of Swadesh, the mathematical basis as well as the original foundation of absolute time computations in glottochronology were by Lees, and that Lees concluded his 1953 article in Lg. with a paragraph which opens with this sentence: "If there are classes of basic-root-morphemes which decay at different rates, the assumption of a temporally constant $k$ for our word list (which presumably contains members of several such classes) is clearly false."

I think we have definite evidence that cognate retention does vary in word classes —as indeed most linguists have suspected right along and some have expressly said: for instance Hymes (with a reference to Kelley on Uto-Aztecan) in Current Anthropology 1:10, 1960. I do not see that this situation constitutes a condemnation of lexico-statistics, or enforces a plea for its abandonment. I argue only that we should face facts, investigate further, and correct and refine the method; which still seems enormously fruitful in potential.

Not the least virtue of lexicostatistics is that it helps bring meaning back into linguistics more definitely—and empirically. The denial of psychologizing in linguistics as such, the banning of mentalism in favor of behavior during the past generation, was a needed purification and has been fruitful. To continue or extend the principle into a ban on all commerce with meaning would be merely a sterilizing taboo. Lexicon no doubt is part of culture, but it also remains part of language; and meaning is an integral attribute of words. The foregoing argument is that words and natural classes of words do have a patterned historical behavior, and that this behavior can be studied by linguistic methods with linguistic relevance.

# SWADESH'S MACRO-MIXTECAN HYPOTHESIS

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0. Introduction
1. Theoretical and methodological objections
2. The position of Trique
3. The position of other languages and groups
4. Phonology

**0.** In a recent article[1] Swadesh has suggested that the Oto-Manguean grouping of Mexican Indian languages (embracing Otomian, Mixtecan, Popolocan, Zapotecan, Chinantecan, and Manguean) be revised in favor of an 'Oto-Huavean' or 'Macro-Mixtecan' grouping (excluding Manguean and including Huave with some reshuffling of the line-up of the various languages and language families).[2] Swadesh suggests that 'Macro-Mixtecan' might thus be used more profitably than as suggested by Millon and myself in 1957 when we considered applying this term to a grouping consisting of Mixtecan proper (Mixtec, Cuicatec, and Trique) along with Amuzgo which was considered to be related to Mixtecan on an earlier horizon of reconstruction.[3] The purpose of this paper is not to quibble over the proposed change of name for this language family. Rather the purpose here is to examine critically certain features of the proposed reclassification: (1) the exclusion of Trique from Mixtecan proper; (2) the inclusion of Amuzgo within Mixtecan proper; (3) the exclusion of Manguean from 'Oto-Manguean' newly constituted as 'Macro-Mixtecan'; and (4) the inclusion of Huave within the newly constituted grouping. However, in regard to the terminological problems involved in these considerations two observations may be made. First of all, there would seem to be no reason for discarding 'Oto-Manguean' until it is demonstrated that Manguean does not belong to this linguistic grouping. Secondly, I have no objections to abandoning the use of 'Macro-Mixtecan' for the linguistic grouping including Mixtecan proper along with Amuzgo—which grouping will henceforth be more unambiguously termed 'Amuzgo-Mixtecan'.

**1.** It is unfortunate that Swadesh has entitled his paper 'The Oto-Manguean Hypothesis and Macro-Mixtecan'. Such a title begs at the outset the question as to the relative solidity of the proposed new grouping versus that of the older and accepted grouping. One over-all purpose of this present paper is to show that the proposed 'Macro-Mixtecan' grouping is fully as hypothetical as the older grouping. Swadesh's failure to establish his new grouping on a solid basis is three-fold. First of all, Swadesh has espoused a novel view

[1] The Oto-Manguean Hypothesis and Macro-Mixtecan, IJAL 26.2 (April, 1960). This article is referred to as OMHMM in the balance of this article.

[2] Swadesh's classifications are still considerably in flux as may be seen by comparing the classification here offered with that found in Mapas de Clasificación Lingüistica de México y las Americas, 1959. Notice also that on page 81 of OMJMM Swadesh adds a note that Chinantecan, which he had at first excluded from Macro-Mixtecan, is after all to be included in that grouping. The same note—added while the article was in press—now assigns Tlappanecan-Manguean to Macro-Mayan.

[3] This article was originally entitled 'A Cultural Analysis of the Proto-Mixtecan and Proto-Macro-Mixtecan Vocabularies' (but Proto-Macro-Mixtecan will be changed to Proto-Amuzgo-Mixtecan in this title). Originally read before the Linguistic Section of the Mesa Redonda on Languages of Oaxaca, Mexico City, 1957, this article will appear in revised form in Anthropological Linguistics.

of linguistic kinship—a view which all but jettisons any useful concept of linguistic relationship. Secondly, glottochronology as currently practiced cannot be considered to be refined enough to serve as a touchstone for linguistic classification.[4] Thirdly, Swadesh has been excessively careless in handling data in this paper (as will be demonstrated in several places below).

Certain theoretical weaknesses in Swadesh's approach are discussed by me in a forthcoming review of Swadesh's 'Mapas de Clasificación Lingüística de México y de las Américas'.[5] In that review it is suggested that Swadesh has scrapped any useful concept of linguistic relationship in that particular, and demonstrable relationships have been abandoned in favor of relationships considered to be (1) universal and diffuse and (2) multilateral and gradient. In regard to the first consideration I note that an affirmation of relationship broad enough to include all the languages of this hemisphere or, for that matter, all the languages of the world has much less import linguistically than do affirmations of particular and demonstrable relationships involving less ambitious groupings. In regard to the second consideration, I suggest that multilateral and gradient relationships of the sort suggested by Swadesh deny, in effect, the relevance of linguistic family in the accepted sense of that term. Swadesh's 'dialect net' concept and 'mesh' principle may be pertinent to internal problems within a linguistic family (e.g., Germanic) or among main branches of a stock (e.g. Indo-European) in that in both such situations we have to deal with bona fide dialect areas where at a period of early dialect differentiation extensive mutual borrowing must have taken place. However, Swadesh has used the 'mesh' principle in a manner which effectively impairs the relevance of such groupings as Germanic and Romance within Indo-European. Were we to ask in regard to Indo-European questions of the sort raised by Swadesh in pages 83–4 of OMHMM we would ask such questions as the following: 'Which Germanic language is most closely related to Romance?' and 'Which Slavic language is most closely related to French?' From the above considerations we have raised the question as to whether Swadesh has not somewhere along the line covertly swapped canons of genetic relationship for canons of similarity.

In the same forthcoming review a question is also raised in regard to the observed fact that empirically determined retention rates of basic vocabulary vary from language to language, and that this fact must be remembered as well as the fact that languages tend to change at approximately the same rate. Swadesh's 'Macro-Mixtecan' scheme of classification is based on minimal centuries of separation calculated according to glottochronology with thresholds of 5000 years, 4000 years, and 3000 years as criteria for setting up Macro-Mixtecan, main subdivisions, and secondary subdivisions. But the construction of a simple graph (such as is found in my review) is sufficient to show that these three thresholds are well nigh meaningless if they vary according to percentages of shared vocabulary obtained by use of empirically observed retention rates varying from 76% to 86%.[6] Granted a given percentage of shared vocabulary, variation of retention rate within these limits can easily result in a glottochronologic count ranging either under or over one of these thresholds. Our conclusion in the review

[4] It is useless for Swadesh to protest here that he has not relied wholly on glottochronology in arriving at his classification. His classification is based on use of thresholds given in minimal centuries derived from glottochronologic counts. Furthermore, as we observe further in the body of the paper above, nowhere does Swadesh challenge or modify data derived from glottochronologic counts in making his classification.

[5] This review is scheduled to appear soon in Language.

[6] Source of these percentages of retained basic vocabulary is Lee's pilot study: The Basis of Glottochronology, Language 19.113–27 (1953).

and in this article is: IF RETENTION RATES VARY AS MUCH AS THE AVAILABLE EMPIRICAL STUDIES INDICATE, THEN GLOTTOCHRONOLOGY IS TOO CRUDE A YARDSTICK TO GAUGE DEGREES OF LINGUISTIC AFFINITY WITH A VIEW TOWARDS SETTING UP A LINGUISTIC CLASSIFICATION.

Swadesh, not insensible to such problems as those just summarized, attempts to circumvent these difficulties by such remarks as the following: 'No transcendent reliability is claimed for lexicostatistics, either in general or in the specific form which we have used. It is considered to be one of several possible indices of affinity, which normally coordinates well with other lines of evidence. It has the advantage of very easy application . . . . However, in every case in which other information is available, it must be taken into account to determine whether it corroborates or changes the results. In the event of contradictory indications in two kinds of evidence, we must not assume any one to be necessarily superior but examine each concrete instance on its own merits.' (OMHMM, 82 a) This is very fairly put. Nevertheless, the fact remains that nowhere in the paper now under consideration does Swadesh question any results of glottochronology in the light of other sorts of available evidence. To be true, the grammatical and phonological material that he cites is most scanty as far as serving as a check on dates and groupings obtained by glottochronology. But he has failed to consider with care previous work concerning Mixtecan, Popolocan, and Popolocan-Mixtecan[7]—work which does provide grammatical, phonological, and lexical data by no means correlating easily or well with groupings obtained by Swadesh's application of glottochronology in reference to these language families. Some of these data are summarized in various sections below.

**2.** One of the most unsatisfactory details in Swadesh's proposed reclassification is the position assigned to Trique which is severed from Mixtecan proper and made a main branch of 'Macro-Mixtecan' along with Jonaz, Pame-Matlatzincan, Otomian, Popolocan, Mixtecan, Zapotecan, and Huave. I have argued since 1955 that 'Mixtec, Cuicatec, and Trique reconstruct as a well-defined linguistic group with no obvious subgroupings of any two languages as opposed to a third.'[8] Swadesh not only removes Trique from Mixtecan but reinstates the Mixtec-Cuicatec-Amuzgo grouping upon which I have cast doubt. Furthermore, Swadesh states 'We now find that Zapotecan is almost as close to Mixtecan as is Trique, and that Popolocan shows a divergence that is only slightly greater' (OMHMM, 84b). He then gives considerable attention to two footnotes in my Proto-Mixtecan, footnotes which I added as of some interest in that certain glottochronologic counts made by Gudschinsky as well as some unpublished vocabulary counts made by Weitlaner seemed to confirm my thesis that Mixtec, Cuicatec, and Trique were coordinate within Mixtecan. However, my claim that these three languages are coordinate is not based on these counts as such but on the whole of the material presented in my Proto-Mixtecan study. It, therefore, little disturbs me if these counts are challenged or even if they are found wrong.[9] What Swadesh has failed to notice

[7] Longacre, R. E., Proto-Mixtecan, IJAL, 23.4 (October, 1957), Part III, Publication Five of Indiana Research Center in Anthropology, Folklore, and Linguistics. Gudschinsky, S. C., Proto-Popotecan IJAL 25.2 (April, 1959), Indiana University Publications in Anthropology and Linguistics, Memoir 15.

[8] Proto-Mixtecan, p. 3.

[9] For the sake of the record, it may be noted that the 'early version of Longacre's Proto-Mixtecan' to which Swadesh refers as source of Gudschinsky's identification of cognates (OMHMM, 86) differed in no essential way from my published study of 1957. Proto-Mixtecan was completed by February 1955 and submitted as a dissertation to the University of Pennsylvania. Subsequent revisions before publication were of

is the evidence that isoglosses involving shared innovations and retentions firmly bind Trique into the Mixtecan family properly constituted.

Glottochronologic counts have indeed established that Mixtec-Cuicatec share slightly more basic vocabulary than do any other two of the three languages that I consider to be coordinate.[10] But this is somewhat to be expected in that Mixtec and Cuicatec have apparently been in unbroken contact since the common Proto-Mixtecan period. By contrast, Cuicatec-Trique have not been in contact in historical times, while an argument can well be made in favor of the thesis that Mixtec-Trique (now found in contact) were out of contact for a significant period of time. The paucity and weakness of shared Mixtec-Trique innovations versus the comparative wealth and strength of Cuicatec-Trique shared innovations seem to indicate that Cuicatec-Trique, although now not in contact, were actually in longer early contact than were Mixtec-Trique. Apparently Trique moved off from Mixtec during the period of early dialect differentiation (but retained contact for some time with Cuicatec) only to be engulfed on all sides by Mixtec during the later period of Mixtec expansion. However, such a development is entirely consonant with the three languages reconstructing together on approximately the same horizon. Our suggested scheme of development does not ignore the data given to us by glottochronology, but it refuses to let glottochronology alone decide matters of relative linguistic affinity.

**2.1.** The following presentation of Mixtec-Cuicatec-Trique isoglosses is detailed, but such detail is germane to the point at issue. First is presented a summary of unique and shared innovations. In further subsections there are presented other sorts of isoglosses which largely involve shared retentions.

There are four unique innovations in Mixtec. (1) Most M dialects develop ñ from *y in forms with presence of a nasal consonant (which was often postvocalic *m). (2) Some M dialects palatalize penultimate *ⁿdi and *ⁿde.[11] (3) Central M dialects metathesize *t...m to *tm which underwent a variety of subsequent dialect developments of which tn and N (voiceless nasal) are typical. (4) M eliminates the fourth tense-aspect of Proto-Mixtecan from verb paradigms.

There are seven unique innovations in Cuicatec. (5) In C penultimate *u > i before labials. (6) In C penultimate *ki is palatalized. (7) C lengthens first syllable of PMx *CVCV canonical forms to typical pattern CVVCV. (8) C develops nasalized vowels in the penultima of CVVCV forms

no great import. It is, therefore, wrong for Swadesh to infer that Gudschinsky's count was based on a 'partly developed phonologic theory'.

[10] Arana's reconstruction of Mixtecan—some two and a half years after my completion of Proto-Mixtecan (with a copy of this available in Mexico City plus micro-film circulation)—is sketchy (contains some 32 manuscript pages of phonology including presentation of cognate sets). Her sketch of Proto-Mixtecan phonology is markedly different from mine as are her resultant reconstructions. It is, therefore, puzzling to read in Swadesh's paper that 'It was possible to check Arana's cognate counts against the phonology not only as formulated by Arana herself but also as expressed in Longacre (OMHMM, 87). Sets that I list as cognate in my dissertation are not listed as cognate by Arana-Swadesh and vice versa. In general, I find more cognates between the three languages than do Arana-Swadesh (some 6%–9% for each pair of languages) with less gap between Mixtec-Trique and the other two pairs of languages. Thus while I get some 2100–2600 years for Mixtec-Cuicatec, and some 3300 years for Cuicatec-Trique, I calculate some 2800–3400 years for Mixtec-Trique.

[11] These developments do not occur in all the Mixtec dialects, but in that they occur only in Mixtec and not in Cuicatec or Trique it may be assumed that these two isoglosses reflect development of new allophones of *y and *ⁿd in Proto-Mixtec (as distinct from Proto-Mixtecan). I am indebted to Cora Mak for pointing out that PMx *ñ need not be posited in that the correspondence M ñ∼C, T y is a result of the development of ñ from *y in certain Mixtec dialects (Proto-Mixtec Phonology, IJAL 26.40, 1960).

with medial nasal consonant. (9) C completely eliminates l from remnants of noun paradigm—while M and T preserve a few l's which possibly hark back to *l in PMx paradigms (but see **4.4**, below). (10) C develops diphthongized vowel reflexes in *ya and *ye forms reduplicated in that language. (11) C loses tone glides from forms with PMx tones *23, *32, *24 and *42, all of which are leveled to C mid-mid tones in CVVCV.

There are nine unique innovations in Trique. (12) T splits *ï into ï and ʌ (only T of Chicahuaxtla but possibly reflects distribution of allophones in Proto-Trique). (13) T splits reflexes of *x according to position preceding front or preceding back vowel (but possibly C does this also; see Proto-Mixtecan, p. 35). (14) T develops long nasals, semivowels, and lateral (m·, n·, y·, w·, and l·) as a compensatory lengthening on loss of penultimate syllable and also develops a similar fortis-lenis contrast in the stops (15) T develops -g- in the situation u . . . w. (16) T phonetically lengthens old PMx echo vowel of originally monosyllabic *CV?V forms by analogy with CVCV forms which had phonetic length on the last syllable (Proto-Mixtecan, pp. 25–6). (17) T builds on the ruins of the old PMx verb system a new system oriented on quite different principles (Proto-Mixtecan, pp. 58–9). (18) T merges each pair of PMx rising and falling glides involving two levels to falling glide (e.g. PMx *34 and *43 > PT *34, modern T 45). (19) T develops a further tone level thus becoming a five-level system while PMx had but four tone levels (Proto-Mixtecan, pp. 82, 100). (20) T eliminates tono-mechanical tone sandhi while PMx, M, and C are characterized by extensive systems of tone sandhi.

There are two shared Mixtec-Trique innovations: (21) MT palatalize *t (M, in certain dialects and under varying conditions; T, everywhere); (22) MT split reflexes of *$\theta$ according to front versus back vowels (M, in the central dialects; T, everywhere)[12].

There are five shared MC innovations. (23) In MC, *$x^w$a > (space)vaa; *$^ng^w$a is treated similarly. (24) In MC *$k^w$V > ku (with loss of vowel and vocalization of labial component) under varying conditions. (25) In MC *o > o/u (versus consistent reflex u in T). (26) MC eliminate w from present day verb paradigms but preserve reflex of old paradigmatic *w in fossilized fragments (while T preserves w in present-day verb paradigms). (27) MC merge PMx tones *2 and *3—thus becoming three-level tone systems.[13]

There are five shared CT innovations. (28) CT have special developments of *i after *$^n$d and *n: *i > C (*$^n$d)e/i, (*n)o/u; > T (*$^n$d)e, (*n)ï. (29) CT have special developments of *e after *w: *(w)e > C a, T i (also *e > C a after *$x^w$ and *$^n$d). (30) In CT penultimate *i > u before labials. (31) CT metathesize *? of certain *-?C- medial clusters. (32) CT reduce *$^n$d > n under varying conditions.

In the above rather exhaustive summary of Mixtecan isoglosses some innovations are, of course, more significant than others. But no attempt has been made to weight the data by excluding some isoglosses and retaining others. Until we are better able to sort isoglosses according to degrees of significance, it is safer simply to list isoglosses as observed. The data summarized in the above isoglosses may be checked in detail by consulting appropriate sections of my Proto-Mixtecan study.

Considering the unique innovations it is apparent that Mixtec is the most conservative and Trique the most innovating. Counting, however, both unique and shared

[12] For details of Mixtec dialect developments involving this isogloss and the preceding one, see Mak and Longacre, Proto- Mixtec Phonology.

[13] Subsequent development of a four-level tone system in San Esteban Atatláhuca is a development peculiar to that Mixtec dialect and has nothing to do with the Proto-Mixtecan four-level system (Proto-Mixtecan, 95-6, 101-2).

innovations, Cuicatec and Trique are about equally innovating. Thus while a total of eleven innovations involve Mixtec, seventeen innovations involve Cuicatec and sixteen involve Trique.

The two shared Mixtec-Trique innovations, (21) and (22), are weak. Thus, development of *t > č is a rather mundane development as are the other sorts of palatalization summarized in isogloss (21). Nevertheless, it is of some interest that this palatalization is restricted to Mixtec-Trique; it occurs in no Cuicatec dialect for which I have seen data (discounting as irrelevant instances of fusion of PC *t with *y > later Cuicatec č, Proto-Mixtecan, pp. 66–7). Isogloss (22) involves some sort of palatalization of *θ before front vowels in Trique and in central Mixtec dialects (but not in archaic fringe dialects of Mixtec). There is therefore a certain similarity between isoglosses (21) and (22) in that both are varieties of palatalization. In that not all Mixtec dialects are characterized by this palatalization, it may be assumed that isoglosses (21) and (22) witness to presence of palatalized allophones of *t and *θ in late PMx dialects that became Mixtec and Trique.

Presumably the Cuicatec-Trique shared innovations should be weighted about as heavily as the Mixtec-Cuicatec shared innovations. Cuicatec-Trique isoglosses (28), (29), and (30) show a certain parallelism in the development of front vowels in these two languages. Similarly, Mixtec-Cuicatec isoglosses (23) and (24) show a parallelism in the treatment of labialized consonants in these two languages—as well as the parallel elimination of *w from verb paradigms in Mixtec-Cuicatec isogloss (26). Mixtec-Cuicatec isogloss (25) is possibly one of the most trivial listed in the entire list while Mixtec-Cuicatec (27) is presumably of considerable importance. Of similar importance, however, is Cuicatec-Trique isogloss (31) in that glottal stop is functionally interrelated with the tones in this language family.

**2.2.** While shared innovations are of greater importance than shared retentions in establishing genetic affinities we present here a summary of the latter to illustrate the thoroughly Mixtecan character of Trique. In this present section we present groupings of two languages against a third in respect to retention of given consonantal alternants. However, before presenting this evidence it is necessary to take account of Swadesh's attempt to dispose of this feature of PMx structure as chimerical.

Swadesh's argument (OMHMM, 93) is that loss of vowels in prefixal syllables with subsequent 'fusion of prefix and root consonant' led me erroneously to reconstruct these consonantal alternations. But in the majority of the sets in my Proto-Mixtecan the same penultimate vowel may be reconstructed, while more than one preceding consonant needs to be posited in many sets. Where, then, is the evidence for loss of vowels in prefixal syllables? Furthermore, if vowels were lost from prefixes at an early date and if the subsequent 'fusion' can be stated in terms of prefix consonant replacing stem consonant, then Swadesh's 'fusion' equals my 'consonantal alternation' and we are left with but a terminological quibble. It is also interesting to note that Swadesh himself reconstructs for general Macro-Mixtecan some patterns of consonantal alternation that have certain elements in common with the alternations that I have posited.

Patterns of consonantal alternation partly similar to those reconstructed for Proto-Mixtecan exist to this day in Trique and Amuzgo (which Swadesh insists should be included in Mixtecan proper). These patterns of alternation can best be explained in terms of the survival of an older pattern (with fossilized fragments surviving in Mixtec and Cuicatec as well). In Trique y/d alternation is common in such forms as

the following: yo$^{3}$?o$^{12}$ *soil*, do$^{3}$?o$^{21}$ (*someone's*) *land* where y- marks the unpossessed form and d- marks the possessed form. In Amuzgo the patterns are more intricate and varied, but the following are illustrative: ts/l (Proto-Mixtecan sets 66, 76, 140, 236), ts/n (sets 98, 171), s/ts (sets 82, 209, 246), s/l (set 121). In the above patterns of alternation the first consonant in each pair marks singular while the second consonant marks plural. In that Amuzgo singular is often indicated by a ts or s element which in at least some environments is a reflex of PMx *$\theta$—which is also a source of Trique penultimate d- noticed above—it is possible to consider that Amuzgo morphemes indicating singular and Trique morphemes indicating possessed both hark back to the same grammatical category in Proto-Mixtecan. It is plausible that this earlier grammatical category had some such meaning as *definite* versus *indefinite* which was marked in several ways including *y (Trique y ~ Amuzgo l as suggested in **4.4.** below).

The alternation of *t and *y which Swadesh attempts to dispose of as chimerical is presented much too summarily by him: 'For example, he [Longacre] speaks of an interchange of *t and *y because of correspondences like Trique žukwa *ant*, žu?wa *flea*, ža?we *nit* with Mixtec tï-yoko, tï-yo?o, tï-ya?u. Now Trique ž is the regular correspondence to Mixtec t, and žu- is the normal form of the animal classifier when it comes in the prefinal syllable and in new formations. In cases like those mentioned we apparently see the reduction of the prefix to ž in the antepenult and its coalescence with *y of the root.' Here Swadesh has failed to study carefully my published materials, or he could not so oversimplify this question. To begin with, I do not posit *t/*y simply on the basis of the correspondence M y ~ T ž. Rather Mixtec, Cuicatec, and Trique are all involved in the posited alternation with reflex of either *t or *y occurring randomly in any of the three languages. Furthermore, this is not simply a phenomenon limited to penultimate syllables but is observable in ultimas as well. Finally, other PMx consonants than *t and *y are involved in patterns of alternation which give every appearance of system and structure—even though survival of a given consonantal alternant is in itself a random and unpredictable matter.

The following data are from Proto-Mixtecan sets where consonantal alternation involving *t is observable in ultimate syllables. In sets 110 and 111 both M and C witness to initial *n, while M and T witness to *t, and M and C witness to *y (witness of same language to more than one alternant is occasioned by occurrence of differing cognate forms in the same language). In set 148 M, C, and T witness to *$^{n}$d as opposed to *y witnessed to only by T. In set 149 M and T witness to *$^{n}$d as opposed to *t witnessed to only by C. Conversely, in sets 150 and 151 M and T witness to *t as opposed to *$^{n}$d witnessed to only by C. In set 178 M witnesses to *y, C to *t, and T to *n. In set 197 M and C witness to *t as opposed to *y witnessed to only by T. In set 221 M witnesses to *n and to *t while C and T witness to *y. In set 250 M and C witness to *$^{n}$d while M, C, and T witness to *y. In set 252 M and C witness again to *$^{n}$d while only T witnesses to *y. Finally, in set 255 M witnesses to *n, C to *t, and T to *y. Such data as the above can be supplemented by more extensive data having to do with consonantal alternation in penultimate syllables while further corroborative data consisting of a quantity of cognate sets discovered since completion of my PMx study could also be cited. But the data summarized above are sufficient to enable us to posit with confidence a paradigm of consonantal alternation which apparently existed in PMx noun stems, viz., *y/*t/*n/*$^{n}$d. That such a pattern of alternation existed and that the

pattern has survived haphazardly in fragments (with a modified system existing in present-day Trique and Amuzgo) accounts most simply for the data. Note especially the inconsistency of consonantal reflex from language to language. This inconsistency is such that if we were to attempt to explain these sets simply on the basis of phonological correspondences we would have to add a quantity of new phonemes to the phoneme inventory of Proto-Mixtecan. Note also the occurrence of etymological doublets and triplets with differing initial consonant even within the same language.

Sets such as those just summarized are distinct from other Proto-Mixtecan sets exhibiting another pattern of alternation in Proto-Mixtecan noun stems, viz., *y/*θ/*ⁿd. The pattern of alternation involving *t may be termed the 't' declension while the pattern of alternation involving *θ (and illustrated a few paragraphs above for Trique and Amuzgo) may be termed the 'θ' declension.[14] As indicative of the system and structure involved at this point, it is noteworthy that in my 279 sets of cognates (often containing several forms within one or more of the languages) there is almost no overlap of sets involving *t with sets involving *θ alternant. The three cases of apparent overlap are discussed on pages 55–6 of Proto-Mixtecan where they are explained as due to mixture of forms from nouns of different declensions but built on the same root. Thus, the posited consonantal alternations are not ad hoc devices rigged up to give us a few more Proto-Mixtecan sets, but constitute, on the contrary, a systematic and basic feature of Proto-Mixtecan structure. Unless these consonantal alternations are taken into account, a consistent picture of Proto-Mixtecan structure is not readily obtainable.

[14] I have combined the former 't' and 'n' declensions as suggested by Gudschinsky, Proto-Popotecan, pp. 54–5. Since *tn is no longer posited for either PMx or PM, I see no good reason for keeping these two declensions separate in PMx.

Furthermore, Swadesh has failed to note that not all occurrences of reflexes of the projected *t variant can be explained as žV- *animal* prefix in Trique. While it is entirely possible that in a few places I may have posited PMx *t variant on forms that might better be explained as recent fusion of such a prefix in Trique, nevertheless in such sets as the following it is not evident that such a Trique prefix is involved: (set 71) M-SE yīt ī C hēētē, T ži³či³⁵? *intestines* (*y/*t/*x, the last alternant is rare on the PMx horizon but apparently more common on earlier horizons); (set 107) M-SM, SE yātà *back*, C táátá *rooftile*, T ži³ča²¹ *back of, roof of* (*y/*t/*t with penultimate vowel *a); (set 110) M-SM yūnū *tree*, M-M *firewood* tutu, C ną?ą *firewood*, yą?ą *stick*, T ži³ču²¹ (possessed) *wood* (penultimate *y and *t in M forms, penultimate *t in T) and with ultimate *n/*t/*y alternation); (set 266) Cⁿdūūtē, T ži³ču²¹ (possessed) *egg*, *fruit* (*ⁿd/*t).

In addition, there are sets in which the present Trique žV- *animal* prefix reconstructs along with a cognate penultimate element in one of the other languages: (set 135) C ?yáádá, T ža³taha⁴³ *bird* (*y/*t with penultimate vowel *a). M here has M-SM tī-sāà, M-SE sāā *bird* with preposed but unfused tī- (from PMx *tu *animal* of set 268); (set 185) C ?yáává, T ža³wi⁵³ *butterfly* (*y/*t). M-SE here has tī-kùvā (with some obscure penultimate form and preposed tī-); (set 209) M-SM ?īsù *deer*, C ?yúúdù?, T žu³ta³h *deer* (*y/*y/*t with penultimate vowel *u). In the sets just given we have evidence for preposed elements reconstructing as *ya/*ta in the first two sets and as *yu/*tu in the last set. It therefore does not appear that the žV- element in Trique is an addition of recent date in that language. Nevertheless, it is significant that in the first set cited the Mixtec cognate does not witness to the presence of a PMx penultimate syllable; while in the second set, if a PMx penultimate syllable is indicated by the M ku- it apparently has

nothing to do with penultimate elements witnessed to by the other two languages. We have here, in effect, another isogloss grouping Cuicatec and Trique as against Mixtec. In such sets as those just illustrated we might do well to posit PMx phrases rather than bisyllabic lexical items. It could then be assumed that such phrases have coalesced in Cuicatec and Trique but not in Mixtec where the prior element of the phrase has either been dropped or abandoned in favor of preposed tï. Thus for set 135 we could posit such a PMx phrase as the following with consonantal alternation in the first member of the phrase: *ya ʔθa, *ta ʔθa *bird*. But it is important to note here that we have not eliminated the consonantal alternation as such. The linguistic history is, in fact, much more complicated than Swadesh's facile explanation would lead us to suppose.[15]

Survival of reflex of given consonantal alternants in the three languages may now be plotted so as to yield further isoglosses. In addition to the data given in my study of 1957 we broaden the empirical base of the following by taking account of some fifty additional unpublished sets.

The various consonantal alternants yield reflexes of varying frequency and importance in the three languages: (1) *y and *t figure prominently in fragments of PMx noun paradigms found in all three languages. (2) Alternants *n and *θ yield reflexes much more frequently in M and T than in C. (3) Alternant *ⁿd yields reflexes more frequently in M and C than in T.

In various specific sets two languages may have reflexes of the same PMx consonantal alternant as opposed to a third language which witnesses to a different alternant. In reference to ultimate syllables (where presumably there is less interference from analogic developments in particular languages) we find the following in sets having cognates in all three languages: (a) 10 sets group M and T, (b) 15 sets group M and C, (c) 3 sets group C and T.

Turning now to the penultimate syllables of my published sets (where consonantal alternation is sufficiently frequent to make it unnecessary to call in further sets to get an adequate sample) we find that: (a) 18 sets group M and T (b) 30 sets group M and C. (c) 18 sets group C and T. These counts include not only sharing of a given consonantal alternant but also presence versus absence of a penultimate syllable (including penultimates obtained by reduplicating the stem as is frequent in M and occasional in C).

In summarizing the above paragraphs note that frequency of distribution of given alternants groups Mixtec-Trique and Mixtec-Cuicatec but not Cuicatec-Trique. Sharing of given alternants in particular sets is most frequent in Mixtec-Cuicatec both in ultimas and penultimas. Nevertheless, Mixtec-Trique share given alternants in a goodly number of instances. Cuicatec-Trique share given alternants in the ultimas of only a few sets while in the penultimas these two languages share an alternant as frequently as do Mixtec-Trique.

**2.3.** Another sort of isogloss may be obtained by plotting shared tone sandhi variants in two language versus a third. For a detailed discussion of the Proto-Mixtecan tone system and how it has been reconstructed see chapter six of my study. Here we only summarize enough to make this section intelligible: (1) PMx was characterized by a four-level tone system with the top level apparently restricted to tone sandhi variants (but certainly phonemic). (2) Canonical forms of PMx were either monosyllabic with one or two tones or

[15] It is possible that the 'θ' declension classified inanimate nouns—including kinship terms—while the 't' declension classified animate nouns—no more arbitrary than is the class membership of inanimate versus animate in Algonquian. As mentioned by Swadesh inanimate versus animate is marked in Chinantec. This might also explain use of *θ and *t in Popolocan-Mixtecan verb paradigms (Gudschinsky, p. 58).

disyllabic with a sequence of two tones which could be identical or non-identical. (3) Basic tone patterns were *2(2), *3(3), *23, *32, *34, *43, *24 and *42. There is good reason to believe that tone pattern *44 did not occur. (4) These basic tone patterns had the following tone sandhi variants:

*2(2) and *24 varied to *21

*3(3) and *23 varied to *11

*34 varied to *14

*43 varied to *13

*42 varied to *41

*32 varied to *31 (in the dialects that became M)

*32 varied to *12 (in the dialects that became C and T—thus giving here another CT isogloss).

In some sets a PMx tone sandhi variant is witnessed to by but one language. In this fashion Mixtec preserves unique witness to tone sandhi variant in 10 sets, Cuicatec in 29 sets, and Trique in 15 sets. Here Mixtec has tended to preserve reflexes of basic tone patterns in preference to tone sandhi variants, while Cuicatec has with considerable frequency preserved reflex of tone sandhi variants. Trique has preserved more reflexes of tone sandhi variants than has Mixtec but less than Cuicatec.

In respect to the sharing of witness to tone sandhi variant the data are strikingly weighted in the direction of Cuicatec-Trique affinities. Thus while there are eighteen sets in which these two languages share witness to tone sandhi variant, there are only two such sets grouping Mixtec-Trique and only two such sets grouping Mixtec-Cuicatec. We obtain here a rather strongly delimited isogloss offsetting somewhat the weakly-delimited Cuicatec-Trique isogloss obtained by taking account of shared consonantal alternant. In that Cuicatec and Trique have been out of contact in historical times this isogloss—although only a shared retention—is undoubtedly significant.

**2.4.** Finally, a set of isoglosses may be obtained by noticing meaning similarities and dissimilarities among the cognates in the published sets. To cite again in full this material would make the present paper unmanageably long. We deal, however, with such differences as the following: (set 7) *to nurse* in MT versus *a small quantity of, drop, fragment* in MCT; (set 9) MT *fever, heat* versus C verb forms meaning *to fry, to boil*; (set 10) CT *to awaken* versus MCT *untie, loosen, wing*; (13) CT *niece* versus M *nephew*; (244) CT *nephew* versus M *niece*; (269) MC *empty, to empty* versus T *hollow reed, hole, anus, vulva*; (267) MC *nose* versus T *to smell*. In many of these cases it is useless to speculate as to original meaning versus innovation. Probably we deal here with an isogloss that partly reflects shared innovations and partly reflects shared retentions.

Meanings are shared in two languages versus a third as follows: (1) MT group together in 24 sets; (2) MC group together in 21 sets; (3) CT group together in 17 sets. The highest score here is for Mixtec-Trique and correlates with the fact that the Triques have been under strong Mixtec cultural influence since the time that they were engulfed on all sides by the wave of Mixtec expansion. Nor is it strange that Cuicatec and Trique have the lowest score, since, as we have repeatedly had occasion to notice, Cuicatec and Trique severed geographical contact before the beginning of historical times. Nevertheless it is of some interest that the CT score is some 81% of the MC score—especially when we remember that the latter two languages have apparently never been out of contact in the course of their development. The possibility remains, of course, that some of the shared CT meanings reflect M influence with subsequent loss of that meaning from Mixtec itself. However, it is difficult to see how this could have happened in reference to sets (13) and (244) cited above where the same root means *niece* in CT versus *nephew* in M while another root means *nephew* in CT versus *niece* in M.

**2.5.** In the above we have considered shared innovations in Mixtec, Cuicatec,

and Trique as well as a number of shared retentions involving grammar and the tone systems, with a further consideration of a mixture of shared innovation and retention involving the lexicons of the languages. Lexicostatistics notwithstanding, it seems to this writer little less than violent to attempt to wrench Trique from its assured place in the Mixtecan family properly constituted. Trique is at least as close to Cuicatec as is the latter to Mixtec while the thoroughly Mixtecan character of Trique is reflected in a wealth of shared retentions having to do with phonology, grammar, lexicon, and tone systems.

**3.** The foregoing argument has been sketched with considerable detail in order to emphasize the fact that linguistic groupings made without consideration of data of the sort just cited are, to say the least, subject to considerable revision. In respect to the position of Trique it is somewhat inexcusable to classify that language as Swadesh classifies it when published evidence to the contrary exists. In respect to the position of Zapotecan, Huave, Amuzgo, Otomi-Pame, Chinantecan, and Manguean —all involved in Swadesh's proposed reshuffling of Oto-Manguean—we simply do not know precisely how they will line up relative to each other until more evidence is in.[16] The older Oto-Manguean grouping at least had the virtue of being more agnostic about detail. In spite of the misleading appearance of rigor in the methodology underlying Swadesh's proposed reclassification, it is scarcely less hypothetical and speculative than the previous grouping. Lexicostatistics, applied on as early a horizon as Swadesh here applies it and without adequate phonological checks, simply cannot be relied on to settle questions of linguistic affinities.[17] It may well be that in problems of this sort lexicostatistics does not perform appreciably better than do shrewd intuitive judgments of the sort underlying the 'Oto-Manguean Hypothesis'.

**3.1.** In respect to the position of Amuzgo it is possible that I may eventually need to rescind my judgment that Amuzgo reconstructs not in Mixtecan proper but on an earlier horizon. Perhaps the more agnostic position taken in my Proto-Mixtecan study would be better at the present time: 'This study leaves open the question as to whether Amuzgo reconstructs in the same relative time-depth with the other three languages or whether it represents a slightly earlier layering . . .' It is in an unpublished article by Millon and myself as well as in a study earlier this year that I committed myself to the point of view that Amuzgo and Mixtecan form an earlier layering.[18]

Nevertheless, for reasons sufficiently discussed and illustrated, I do not feel that

[16] But this evidence which will enable us to draw isoglosses between main branches of Oto-Manguean should be forthcoming soon. The Mixtecan and Popolocan branches have been reconstructed by myself and Gudschinsky. The Newman-Weitlaner study of Otomi-Mazahua (Central Otomian, IJAL 16.1–19, 73–81) of 1950 has been recently further amplified and slightly revised by Doris Bartholomew who has also added data from Pame (unpublished thesis). Meanwhile the unpublished study of Maria Teresa Fernandez de Miranda and Weitlaner on Chiapanec-Manguean—see my section **3.2.** above—readies another branch of Oto-Manguean for comparison on earlier horizons than we have yet reached. Maria Teresa F. de Miranda is also currently engaged in work on an etymological dictionary of Proto-Zapotecan. This latter study will give us extensive Zapotec data well processed and ready for further comparison—although the Zapotecan phonology will not differ too radically from that found in Swadesh's excellent sketch of Proto-Zapotec (IJAL 21.121–37, 1947). Of all recognized branches of Oto-Manguean only Chinantecan lacks a protolanguage adequate for further reconstruction. One of these days it should be possible to reconstruct Proto-Oto-Manguean by comparison of these several reconstructed proto-languages. Then, isoglosses may be drawn for Oto-Manguean and genetic affinities posited in a sense that cannot be done as yet.

[17] Witness Arndt's caveat at the close of his article The Performance of Glottochronology in Germanic, Language 35.180–92 (1959).

[18] Millon and Longacre, Mak and Longacre, articles already cited.

we can grant to lexicostatistics the privilege of definitively settling the linguistic position of Amuzgo. I therefore offer, with some diffidence, the following data which seem to point in the direction of considering that Amuzgo reconstructs with Mixtecan on an earlier horizon:

(1) It seems necessary to reconstruct a further vowel (*ë) when Amuzgo is taken into account. Such a further vowel was reconstructed for Popolocan-Mixtecan by Gudschinsky from the correspondence Popolocan *e ~ Mixtecan *a. However, after *w Gudschinsky noticed that Popolocan *a ~ Mixtecan *e. From the latter sound correspondence which is in complementary distribution with the former she reconstructed a further allophone of Popolocan-Mixtecan *ë, i.e., an allophone occurring after *w.[19] It is interesting to note here that after *w Amuzgo a also corresponds to Proto-Mixtecan *e with further contrasting sets of correspondences following *w for what appear to be Amuzgo-Mixtecan *i, *e, and *a. Thus, from Amuzgo e ~ PMx *i we reconstruct Amuzgo-Mixtecan *i, while from Amuzgo e ~ PMx *e we reconstruct Amuzgo-Mixtecan *e, and from Amuzgo a ~ PMx a we reconstruct Amuzgo-Mixtecan *a. It seems plausible that from the further correspondence, Amuzgo a ~ Mixtecan e, which like the three just listed also occurs after *w, there should be reconstructed a further vowel *ë. It is significant here that not only do we need to reconstruct an additional vowel, but that the allophone of this vowel found after *w gives identical reflexes in Proto-Popolocan and Amuzgo on the one side versus Proto-Mixtecan on the other side. In brief the 'extra' vowel needed to reconstruct Amuzgo along with Mixtecan is very similar to the 'extra' vowel needed for reconstructing Proto-Popolocan along with Proto-Mixtecan. Substantiating data follow:

[19] Gudschinsky, p. 45.

Amuzgo-Mixtecan *i: A we, PMx *wiwi$^{?}$ *two* (set 42); A kue$^{?}$, PMx *k$^{w}$ɔ$^{2}$wi$^{4?}$ *to die* (43); A tsue, ntue *lightning*, PMx *ya$^{3}$wi$^{3}$, *θa$^{3}$wi$^{3}$, *θa$^{3?}$wi$^{3}$ *rain, thunder* (45).

Amuzgo-Mixtecan *e: A tsue$^{?}$, lue$^{?}$, PMx *ya$^{2}$we$^{3?}$, *θa$^{2}$we$^{3?}$ *cliff, cave* (67); A tsue, lue, PMx *yu$^{2}$we$^{4?}$, *θu$^{2}$we$^{4?}$ *straw-mat* (68).

Amuzgo-Mixtecan *a: A kua$^{?}$, PMx *k$^{w}$a$^{4?}$wa$^{2?}$ *to strike* (181);[20] A tha, wha, nkha *to go*, PMx *wa$^{?}$ (133).

Amuzgo-Mixtecan *ë: A tsua, lua *cactus*, PMx *ya$^{3?}$we$^{4?}$, *θa$^{3?}$we$^{4?}$ *century-plant* (66); A ts$^{?}$ua, PMx *ya$^{3?}$we$^{2}$(?), *θa$^{3?}$we$^{2}$(?) *market-place* (69).[21]

(2) Some sets where the Mixtecan languages have no trace of a final *?, both Amuzgo and Proto-Popolocan agree in having this feature: A (tæ) ntæ *beans*, ntæ$^{?}$ *kidneys*, PMx *$^{n}$du$^{3n}$di$^{4}$ *beans* (17), PPn *hma$^{?}$ *beans* (Gudschinsky, set 202); A (tæ) ntæ$^{?}$, PMx *tu$^{3n}$di$^{2}$, *$^{n}$du$^{3n}$di$^{2}$ (16), PPn *ma$^{?}$ (Gudschinsky, set 233). The correspondence PMx *$^{n}$d ~ PPn *m has not been proposed before but can be substantiated by several good sets. In reality I do not believe that PMx *$^{n}$d corresponds to PPn *m as such. Rather, there was an alternation *$^{n}$d/*n in PMx (see my sets 89–94 and patterns of consonantal alternation already discussed). In that preposed elements with post-vocalic *m existed in both PMx and pre-PMx (Proto-Mixtecan, pp. 73–4) the cluster *mn arose (probably bisyllabic?). This cluster was reduced to PMx *n but to PPn *m (cf. Gudschinsky

[20] The Amuzgo form quoted in my set 69 could be assigned to my set 181. But A ts$^{?}$ua marketplace undoubtedly belongs to 69.

[21] Possibly my set 69 might be assigned to Gudschinsky's 304 or 309 rather than to her set 306. There is a rather puzzling overlap here of sets. If my set 69 be assigned to Gudschinsky's set 309 then Proto-Popolocan-Mixtecan vowel *ë must be reconstructed. If my set 69 be assigned to her set 306 then Proto-Popolocan-Mixtecan *e must be reconstructed. But my set 181 cognate with her set 309 gives Proto-Popolocan-Mixtecan *a.

set 227 with Longacre set 24). The Amuzgo agrees here with the Popolocan side in retaining *ʔ but agrees with the Mixtecan side in not having m.

(3) Possibly Amuzgo affords some evidence that it ties into PMx at a period when the prenasalized stops of the latter had not yet fused into unit phonemes but were still clusters. The development of the PMx prenasalized series was probably due to the presence of pre-PMx clusters consisting of syllable-final *m plus syllable-initial spirant or stop. Eventually the *m came to vary morphophonemically to *n. On disappearance of the bulk of such clusters—by dropping of *m/*n—the surviving clusters coalesced into the prenasalized stops of the PMx horizon. It is possible that Amuzgo preserves some evidence of alternating patterns involving Amuzgo-Mixtecan spirant plus or minus preceding nasal. Such evidence, while it may not be pressed too far, may indicate a certain fluidity in regard to the phonetic sequences which eventually became prenasalized phonemes. Thus, in set 96 there occurs A šʔe (sg), nkʔe (pl) *leg* which tie into a PMx root *-ʔmï with uncertain penultima. Here A e is the regular and well attested reflex of *ï while loss of *m from *ʔm cluster is such a frequent development in Mixtec, Cuicatec, and Trique (Proto-Mixtecan, p. 39) that it is not at all strange if Amuzgo shares the same development. A š seems to be a regular reflex of *x while A nk is possibly from *nx and ultimately from *mx at a still more remote period. Similarly, in set 93 A has šue (sg), nkue (pl) *day, light, fiesta, name* which ties into PMx *$^{n}$dɔ$^{3n}$g$^{w}$ï$^{3}$, *tɔ$^{3n}$g$^{w}$ï$^{3}$ (nominal forms) and *kɔ$^{3n}$g$^{w}$ï$^{3}$, *xɔ$^{3n}$g$^{w}$ï$^{3}$ (verbal forms) which such meanings as *heavens, sun, day, name.* Here it is very possible that Amuzgo witnesses to an old *x$^{w}$/*nx$^{w}$ alternation.

(4) In such patterns as those above and in still others, Amuzgo seems to bear witness to patterns of consonantal alternation that are similar to those found in PMx but differing in certain respects. Furthermore certain of these differences are explicable on the hypothesis that they reflect consonantal alternations of an earlier period than those found in PMx. Especially noteworthy is the occurrence of Amuzgo t in verb paradigms of that language. If, as is very probable, A t proves to be a reflex of Amuzgo-Mixtecan *t, this occurrence of t in Amuzgo verb paradigms is a matter of considerable interest; for while *t does not figure in PMx verb conjugations, this phoneme does figure in Proto-Popolocan verb conjugations (Gudschinsky, p. 58). Or, to state the matter differently, in that t figures in verb conjugations in present-day Popolocan languages but not in present-day Mixtecan, Amuzgo here lines up with the former rather than with the latter in respect to this feature.

I would not be so rash as to claim that any of the above arguments are conclusive. However, they lead me to believe that Amuzgo ties into Mixtecan on some earlier horizon than Mixtecan proper. It may even be that Amuzgo, Popolocan, and Mixtecan are coordinate. Or, as we suspect, we may have simply an Amuzgo-Mixtecan grouping. Be this as it may, for the present all such judgments—whether by Swadesh, myself, or anyone else—must be considered to be speculative until the phonology of Amuzgo and Mixtecan is investigated more thoroughly according to the tenets of the comparative method.

**3.2.** In regard to Manguean, an excellent unpublished study by Maria Teresa F. de Miranda and Robert Weitlaner[22] demonstrates that Manguean can be shown to be related to Popolocan-Mixtecan in the solid sense of the word 'related'. Apparently

[22] Maria Teresa Fernandez de Miranda and Robert Weitlaner, Sobre Algunas Relaciones de la Familia Mangue. The writers of this paper have done well with very sketchy and limited data—often from very old sources and often poorly recorded. Both Chiapanec and Mangue are presumably extinct at the present time.

Manguean is approximately as close to Mixtecan as to Popolocan—but this question might better be deferred until the reconstruction of Proto-Oto-Manguean permits us to draw isoglosses among the various branches of that stock. Manguean has interesting patterns of consonantal alternation consisting of consonant plus or minus preceding nasal which gives evidence of having been *m varying morphophonemically to *n. Interestingly enough, old consonant group *mn gives Manguean m as in Popolocan.[23] At any rate, whatever the precise position of Manguean in Oto-Manguean it seems to this writer that it certainly cannot be excised from that stock as Swadesh suggests. To be sure, Swadesh gives on pages 109–10 of his article some data offered in support of the thesis that Manguean-Subtiaba and Manguean-Misquito affinities exist, with 25 sets of apparent cognates for the first pair of languages and 17 sets of apparent cognates for the second pair of languages. However, criticisms of the sort I level against Swadesh's apparent cognates for Huave-Zapotec (see my detailed evaluation in **3.4.** below) hold with even greater force in reference to these alleged affinities for Manguean outside of Oto-Manguean as formerly constituted. This is not meant to deny that such relationships may not be eventually demonstrable, but only to emphasize that they have not yet been demonstrated.

**3.3.** Further study will be needed to settle the position of Zapotecan. Here, as in the case of Manguean, what we need is a reconstruction of Oto-Manguean in enough detail to permit us to draw isoglosses giving us genetic groupings. Up to the present I have believed that Popolocan and Mixtecan group together as proposed some time ago by Weitlaner and embodied in the fine linguistic map of Jiménez Moreno and Mendizábal (1941). But the possibility still remains that other languages, say Zapotecan, Otomi-Pame, Chinantecan, Manguean, or some combination of these may prove to tie into Popolocan and Mixtecan as closely as these two languages relate to each other. Nevertheless, whatever the eventual outcome, Gudschinsky's reconstruction of Popolocan-Mixtecan provides a solid nucleus for such further work—and it may yet prove that these two language families are properly grouped together genetically as opposed to other Oto-Manguean languages.

**3.4.** One of the most novel things in Swadesh's proposed reclassification is the inclusion of Huave in 'Macro-Mixtecan'. The one structural feature that he cites as uniting Huave and the other languages is the presence of na- 'adjective' prefix which can be compared with prefixes found in other languages and consisting of n plus or minus various following vowels. The meanings of the prefixes are quite disparate in the various languages: Zapotec 'stative of verb and adjectives' and 'animal names'; Chatino 'present'; Chiapanec (Manguean) 'adjectival', 'substantival'; Mazatec 'stative'; Popolocan 'noun suffix', 'fossilized prefix'; Mixtecan 'fossilized element found in various roots'. Swadesh also mentions in passing that there are structural similarities between Huave and Otopamean: 'In Otopamean, it would appear that Otomian is the one with the most marked peculiarities . . . reminiscent of Huave and other languages not belonging to Oto-Manguean, such as Mayan, Mixean, and Uto-Aztecan' (OMHMM, 90).

Swadesh gives very little in the way of systematic phonology between Huave and the other languages. He alleges 'development of a single, stem-medial stop to a voiced phoneme in Huave' (OMHMM, 95)—and gives one substantiating set (with Huave -laag ~ Proto-Zapotec *(ti)naka *ear*). He also alleges 'preservation

[23] These are interpretations which I have drawn from my own study of the unpublished manuscript of Maria Teresa de Miranda and Weitlaner and do not necessarily reflect the opinions of the authors.

of voiceless stop in Huave stem initial' (OMHMM, 95), and again cites but one substantiating set (Huave nipilan ~ Proto-Zapotec *(ni)penni *person*) which is, however, one of the best Huave-Zapotec sets offered by Swadesh. He admits that 'So far we have not found much clear evidence for the origin of Huave voiceless stops from stem-medial geminate stops (or consonant groups), an assumption we have tentatively made to account for the existence of the voiceless versus voiced contrast in this position' (OMHMM, 95). To explain 'rare cases of initial voiced stop in Huave' he infers loss of preceding vowel with reinterpretation of first consonant as prefix element and subsequent elimination of this consonant in both Zapotec and Huave. Again, but one substantiating set is cited. In all these points it may be that sets elsewhere in Swadesh's paper have corroborative value, but he does not give cross reference to such sets.

All told, Swadesh cites about 47 etymologies involving Huave and various Oto-Manguean languages. Apparently these sets are drawn almost exclusively from the lexicostatistic lists of 100 items (except in fact for one set, the set involving the meanings *turn*, *run*, and *rabbit*). One could wish that in proposing relationships as novel as that here proposed Swadesh would present data drawn from a broader front. A Vocabulario Huave by Milton and Clara Warkentin (1952) provides abundance of material for assembling further sets—assuming for the sake of the argument that such sets may be assembled.

Of the 47 etymologies involving Huave, 28 are given in the diagnostic list embracing Huave and Zapotec of Ixtlan (actually Swadesh states the number at 29 but he evidently failed to copy out the set *cipa/cpa *fire*, *hot* given by him earlier in the paper on page 95). These 28 sets form a convenient point at which to evaluate the solidity of the evidence for the alleged relationship, especially since Huave-Zapotec affinities seem crucial to the inclusion of the former language in this proposed grouping. This list of 28 sets is therefore evaluated in detail below.

(1) One of these sets is to be rejected entirely in that it is based on a wrongly identified Huave form, i.e., Huave capay ~ Z sa *grease*. Warkentin checked this datum for me with his Huave informant who knew of no such Huave word. There is, however, a Huave form capah meaning *thick* so it is plausible that the Spanish meaning of this form (grueso *thick*) was confused with the Spanish for *grease* (grasa) with a further error in transcription of the last phoneme of the Huave form itself.

(2) Of the remaining 27 sets, there are three sets that have no reconstructed phoneme in common between the reflexes in the two languages: Z lu, H -nii-ag, *ne/lo *eye*; Z ččuppa, H ih-, *(t)yowi *two* (Swadesh explains the Z form as stemming from some sort of alternant with a *wqʷ cluster while the H form is explained as coming from *ye-qho OMHMM, 103); Z la, H nït, *la/nu *name*.

(3) Of the remaining 24 sets there are 11 sets which have but one reconstructed phoneme in common between reflexes in the two languages: Z stale, H šeyay, *se *many*; Z (l-)iʔ, H i(-ke), *yi *thou* (whence the l- on the Z form?); Z pantaka, H (o-)p, *pani *leaf*; Z ṣ(ku), H -ši(ic), *ṣe *root*; Z -o, H ï(et), *wu *eat* [assuming for the sake of the argument that Z o/u ~ H ï; Swadesh nowhere states this, however]; Z ñe, H -leah, *l/neʔyaqh *foot*[24]; Z -uti, H ïïc, *ote/oce *give* [assuming again that Z o/u ~ H ï]; Z yu, H iït, *yo/yeyo-t *earth* [assuming again the vowel correspondence mentioned just above]; Z tani, H tiïk, *ta/te(yoq) *mountain*; Z ṣipi, H kos *(ṣi-)qʷe/qʷo(ši) *knee*; Z čaʔ, H cïpiow, *ca/co *full*. In a few of the above sets I have added parentheses to enclose parts of forms that do not seem

[24] I assume that on 109 the form *le'yagh is a misprint for *leʔyaqh.

to be taken account of by Swadesh in the reconstructions and hence do not appear to be considered by him to be etymologically pertinent.

(4) Of the remaining 13 sets, there are 10 sets that have two reconstructed phonemes in common between reflexes in the two languages: Z canke, H aag(-ayah), *hake *that* [assuming for the sake of the argument that Z a ~ H a and that Z k ~ H g, but whence the Zapotec -n-? The second element on the Huave form is identified by Warkentin as a Spanish loan allá *over there*]; Z kke, H ngo, *nke/nko *not* [assuming for the sake of the argument that Z kk ~ H ng]; Z ttopi, H nop, *ntopi/notpi *one* [maybe this set could be considered to have three phonemes in common, *n, *o, and *p, but the *n occurs in a cluster in one reconstructed form but prevocalic in the other reconstucted form, so that while Z tt could be considered to hark back to *nt no corresponding cluster exists to substantiate this in Huave]; Z pi?kku?, H pet, *pe?kku-t *dog* [but *pekk-t is posited as a special alternant to explain the H form, OMHMM, 95]; Z tiaka, H -laag, *(ti-)naqa/laqa *ear* [Where does the Z form give evidence of an alternant with *n-? Swadesh nowhere tells us that *n is lost on occasion before vowels.]; Z ṣi, H -šing[25], *ṣi *nose*; Z laya, H -lïek, *laya/luye-k *tooth*; Z luči, H -niw, *lew/new *tongue* [granting again for the sake of the argument that Z u ~ H iw. But all this remains speculation until the comparative phonology of Huave-Zapotec is worked out. Whence Z -či ?]; Z yanni, H -nik, *(yaq)neq$^{w}$ *neck*; Z pi, H -püng, *pi *say* [Whence H ïng ?].

(5) There remain three Zapotecan-Huave sets with something more than two reconstructed phonemes in common: Z pinni, H nipilan, *(ni-)pila-ni [It seems necessary to assume here that there was a form *pil-ni which became Zapotec pinni, but Swadesh makes no statement about this or about loss of stem-final vowels]; Z pan-tati, H -pang, *pani *bark* [Whence the additional elements in Z and H? Warkentin insists that the o- on the Huave form opang *bark* must be retained and that this is not the o- prefix which Swadesh has rightly cut off from stems meaning body parts]; Z tti, H -ndeow, *nte *die* [Assuming that Z tt ~ H nd just as Z kk was assumed to correspond to H ng above].

(6) In this list Swadesh assumes alternation *l/*n in five sets. In one of these sets (that meaning *ear*) we have questioned whether there is any evidence for *n. In another set (that meaning *foot*) the alleged *n has reflex ñ in Zapotec. Two of the other three sets cited as displaying this alternation have alternation in the reconstructed vowels as well. However, in the set meaning *tongue* the reconstructed vowel may be considered to be the same if we allow Z u ~ H iw. Counting the two sets just mentioned there are all told seven sets for which Swadesh posits vowel alternation. This alternation consists of *e/*o, *a/*e, *a/*u and *a/*o. Other sorts of alternation are suggested by him here and there in a fashion which appears to be somewhat ad hoc: *ntopi/notpi *one*, *ote/oce *give* and *yo/yeyo-t *earth*. Such alternations are, of course, entirely possible, but the fact that so many alternations of such disparate types are posited in so small a corpus gives these sets the appearance of a tour de force in attempting to demonstrate Zapotecan-Huave affinities.

(7) Swadesh assumes presence of various prefixal and suffixal elements in one language as opposed to the other. Thus, he may on occasion compare the fore part of a form in one language with the latter part of a form in another language. Again, it must be insisted that until some system is posited to regulate this sort of linguistic surgery, this feature further weakens the evidential value of these 27 sets. However, Swadesh makes a beginning in the direction of identifying some affixal elements. Thus,

[25] I assume that on 109 the Huave form -Sing is a misprint for -šing.

he posits a *-t suffix attested to in Huave only: 'Such a suffix is a reasonable supposition in view of other Huave nouns like šiit *rope*, neat *year*, iit *earth*, kïet *fish*, etc., even though other substantives seem to have a suffix -k or to end in the stem consonant' (OMHMM, 95). But other affixal elements are posited ad hoc in various sets: e.g., *(ṣi-)q$^{w}$e/q$^{w}$o(-si) *knee* is set up to account for the ṣi on the front of the Zapotec form and the s which is final in the Huave form. On the other hand, in such Huave forms as -siič *root* (<*ṣe), -pang *bark* (<*pani), ïet *eat* (<*wu), -ndeow *die* (<*nte), and -piïng *say* (<*pi), the reader is left to wonder what is the source of the final consonant in Huave. Are just about all stem-final consonants in Huave to be considered to be frozen, non-productive suffixes? If not, which consonants are old suffixes and which are not, and by what criteria? Again, if all Huave stem-final consonants are old suffixes, then which are Huave innovations and which are inherited material? Pending answers to such questions as these it must be admitted that failure to account for Huave stem-final consonants weakens Swadesh's case.

The Zapotecan-Huave data presented by Swadesh are tantalizing and suggestive. Nevertheless, it may well be questioned whether or not such data as here examined constitute a demonstration of the alleged relationship. Indeed, if we grant (1) only a most rudimentary comparative phonology, (2) the right to compare willy-nilly any part of a resemblant form in one language with any part of a resemblant form in another language (along with failure to account for the remaining parts of the words), (3) the right to posit ad hoc alternations of disparate sorts in order to square one resemblant form with another, and (4) very free semantic associations—then about any two languages of the world (even those widely separated in time and space) could be shown to be 'related'. If, for example, English were an American Indian language with its structure little studied, what would hinder us from associating English neck with *(yaq)neq$^{w}$ *neck*, or English two with *(t)yowi *two*, or bark with *pani *bark* (cutting off the last two consonants of the English form), or knee with *(ṣi-)q$^{w}$e/q$^{w}$o(ši) *knee* (provided we pronounce the initial k- as in older English and consider the -n- to be some sort of infix), or eat with *wu (the English form is scarcely less resemblant than the Huave ïet *eat*), or look with *ne/lo *eye* (provided that we cut off the English stem-final consonant), or name with *la/nu (by similar surgery on the English form)? Only rigorous application of the comparative method in a corpus more extensive than a list of 100 items can spare us such absurdities as those I have just mentioned.

**3.5.** Furthermore, the reservations just expressed regarding the Zapotecan-Huave data apply a fortiori to Swadesh's more inclusive sets. Such an ensemble as that on page 97 of OMHMM (*qhani/qhari/qhahni *big*, *long*, *qhali/k'a?li *long*, *qani *all*, *many*, *qhin *late*) is a veritable jumble of forms and meanings ending up with citation of resemblant forms in Tarascan, Catawba, Pomo, and Kekchi. Some of the resemblant forms here cited hark back to Gudschinsky's sets 70, 75, 183, and to Longacre's set 275. Conceivably all these sets and further material cited by Swadesh could have some connection, but data of the sort given in this paragraph of OMHMM scarcely suffice to establish such a connection.

An ensemble on page 103 of OMHMM (*ye?na/yehna/yonah *chile*, secondarily *red*) contains an egregious blunder. The Trique form nnąʰh (Swadesh fails to transcribe the nasalization) is cited along with Mixtec and Cuicatec cognates as meaning *red*. But the Mixtec, Cuicatec, and Trique forms here cited (my set 167) do not mean *red* but rather *net bag* (of maguey fiber). Somewhere along the line Swadesh has confused the Spanish word red *net bag* with the English word red.

**4.** The writer had in mind a rather detailed review of Swadesh's section **7** on phonology. In that this paper has already grown far too long I refrain and make only a few summary comments.

**4.1.** Swadesh appears to me to be unduly confident in stating 'It is possible to prove existence of two distinct k-positions' (OMHMM, 96). He argues that palatalized dentals in Popolocan are evidence for front velars in that they occur in forms having k's in other languages. But he has to qualify this assertion considerably and has really but three sets from which this can be argued. It remains to be seen whether or not the crucial connections can be demonstrated. Gudschinsky separates as coming from different roots some of the forms that Swadesh attempts to associate here. For example, under *khe/ke/qe/qhe *blood, saliva, pus* Swadesh groups Popolocan forms from Gudschinsky's sets 34 (PPn *t$^{y}$a), 213 (PPn *hñi?), and 259 (PPn *nta?). Whether these forms—themselves so mutually disparate—in turn have a connection with Otopamean and Huave forms with k-like phonemes is precisely what needs to be demonstrated, not merely assumed.

As indicative of the confused nature of the paragraphs in this section of OMHMM note that Trique ku[12] *bone* is unwittingly given two separate etymologies by Swadesh, i.e., under both *qani/koni *bone, stone, egg, fruit* and also under *(n)t'uqhe/tuqe *top, horn, head, mountain.*

**4.2.** Swadesh proposes (OMHMM, 98) to link Popolocan-Mixtecan *k$^{w}$ with Zapotecan *p on the supposition that Proto-Macro-Mixtecan (or Proto-Oto-Manguean) *k$^{w}$ and *p were merged into Popolocan-Mixtecan *k$^{w}$ but into Zapotecan *p. He also brings the more conjectural *q$^{w}$ into this scheme (see my paragraph above). In that this PMx *k$^{w}$ ~ Z*p correspondence may well prove to be a valuable insight into Oto-Manguean phonology it is to be regretted that Swadesh's contribution at this point is obscured by a mass of loosely assembled sets subject to such criticisms as those voiced in the preceding section of this paper.

**4.3.** The labial nasal is not only a peculiar phoneme in Zapotecan (OMHMM, 99) but has some marked distributional idiosyncracies in Mixtecan (i.e., in Mixtec, Cuicatec, and Trique) and in Amuzgo. Thus *m by itself is rare in prevocalic where it is more often found in the cluster *?m. But postvocalic *m and *m? were quite common and are posited as the main source of Mixtecan nasalized vowels.[26] Zapotecan-Mixtecan relationship looks solid in Swadesh's set *to?mi/ši-tom *feather, hair*—although the Mixtec is erroneously transcribed as tu?mi with medial -?-. But in the next set (under *ṣuhmana *tail*) he associates Proto-Mixtec *ɬu?ma (so reconstructed by Arana and Swadesh; I see no need for positing a voiceless lateral in PMx or in PM) and Trique du$^{3}$ne$^{35}$? *tail* (with the final ? left off in Swadesh's transcription). I know of no way in which M m can be associated etymologically with T n (nor do Swadesh and Arana suggest any such correspondence anywhere).

**4.4.** In the section concerning Macro-Mixtecan sibilants Swadesh states: Mixtecan dialects [give] s, d, or l thus fusing either with *s or diminutive *l, but we have to suppose a separate phoneme in Proto-Mixtec, which we set up as *l, to account for modern developments' (OMHMM, 100). The context of this sentence does not make clear what phoneme is meant as 'fusing with *s or diminutive *l'. At any rate, taking Mixtec without any reference to more remote affinities, both Mixtec s and d (according to dialect) hark back to a Proto-Mixtecan phoneme which I have symbolized as *$\theta$ but which Swadesh symbolizes as *s.

[26] It is superfluous to reconstruct (as do Arana and Swadesh) both *-m and vowel nasalization (symbolized by Arana and Swadesh as -N), in that post-vocalic *-m is source of vowel nasalization in the Mixtecan languages. See Proto-Mixtecan, 46-8.

Here Mixtec dialect evidence is against identification of this phoneme as *s in Proto-Mixtec in that while reflex s (varying to š before front vowel) occurs in the more or less central Mixtec dialects, the reflex d (voiced alveolar continuant) is found in dialects scattered around the fringe of the Mixtec area, i.e. precisely where we would expect to find archaisms.[27] I posit Proto-Mixtec *θ which was voiced to continuant d in some dialects (maybe Proto-Mixtec *d would be better than *θ?) but made a sibilant in the central dialects. This Proto-Mixtec *θ (perhaps *d) corresponds to Cuicatec d and Trique t/c (according to back and central versus front vowel). In that the Proto-Mixtecan phoneme seems to have been some sort of voiceless alveolar/dental continuant, the symbol *θ does not seem illogical.

Swadesh nowhere tells us on what grounds he feels it necessary to set up Proto-Mixtec *l as well as *l. I have considered Proto-Mixtecan *l—itself a rare phoneme—to be a further but infrequent consonantal alternant figuring in the θ declension of Proto-Mixtecan nouns. But I have become increasingly suspicious of the phonemic status of *l. In PMx ultimate syllables *l occurs only before *u and *i. PMx *y occurs frequently before other vowels and only rarely before *u and *i. Furthermore, my one set (19) where *li reconstructs contains *? while the one set (49) where *yi reconstructs does not contain *?. Conversely, the two sets (272, 273) where *lu reconstructs do not contain *? while the two sets (278, 279) where *yu reconstructs do contain *?. It is therefore possible that Proto-Mixtecan *l and *y were the same phoneme. Should this prove to be true the irregular presence of *l in PMx θ declension would be disposed of by making *l an allophone of *y which varies regularly with PMx *θ. Furthermore, the regular correspondence of Amuzgo l to PMx *y would become more plausible. A problem would still remain concerning sporadic appearance of l- in certain Mixtec dialect forms. Cuicatec apparently is not characterized by penultimate l in forms cognate with those having penultimate l in Mixtec. Trique has a few forms with penultimate l (my sets 127, 142), but it is possible that these may prove to be loans from Mixtec. Apparently Swadesh disposes of Mixtec dialect forms with penultimate l by setting up the special Proto-Mixtec phoneme *l. An alternative explanation might be that in the PMx dialect that became Mixtec *y and *l were allophones varying freely in penultimate syllables. In other Proto-Mixtecan dialects allophone *l did not occur in penultimate syllables. For the time being I still retain *l as a phoneme pending further investigation. Were we to adopt the explanation that *l and *y were allophones, then we would lose a unique Cuicatec innovation (number 9 in the list of innovations unique and shared) while we would recognize another Cuicatec-Trique isogloss of uncertain innovation-retention status.

Swadesh's attempt to demonstrate three original Macro-Mixtecan sibilants is weakened in that he posits that 'the three original sibilants were in alternation, so that the same root frequently shows two or all three of them' (OMHMM, 100). In fact so 'frequent' is this alternation that no one set cited by Swadesh is characterized by one and only one reconstructed sibilant. It is, therefore, difficult to equate any alleged reflex with its alleged source and demonstrate contrasting sets of correspondences.

**4.5.** Swadesh desires to reconstruct a

[27] See Mak and Longacre, pp. 30-1. The 'fringe' dialects where reflex d of PMx *θ occur are two dialects of the state of Puebla (Tonahuixtla and Chigmecatitlán), one Mixtec dialect that is a linguistic island surrounded by Mazatec speakers (San Juan Coatzospan, Oaxaca), two dialects on the eastern extremity of the Mixtec region (Tamazola and Yucucundo, Oaxaca) and one lowland dialect (Atoyac, Oaxaca). The dialects represent, then, the northern, northeastern, eastern, and southern fringes of the Mixtec-speaking region. In brief, distribution of reflex d tallies up to a classic picture of the distribution of an archaism according to the tenets of dialect geography.

Macro-Mixtecan *r but states that 'Various comparisons point to an *r in the protolanguage, but fairly complicated Popolocan reflexes leave more problems than can satisfactorily be solved on the basis of the possible cognates so far noted' (OMHMM, 101). In Mixtecan itself it is a work of supererogation to set up such a phoneme. Swadesh reconstructs Mixtecan *r on the basis of the alleged correspondence M y ~ C d ~ T d/t. But this is a pseudo-correspondence of the same sort as those mentioned on page 41 of my Proto-Mixtecan study. What Swadesh has done is to extract two frequent alternants from the *θ* declension of PMx nouns and set up reflexes of these alternants as a sound correspondence. Mixtec y is a reflex of PMx *y while Cuicatec d and T d/t are reflexes of PMx *θ—and the two phonemes *y and *θ (each abundantly witnessed to in sets without consonantal alternation) occurred in a pattern of phonemic interchange. I will not labor here again the matter of the solidity of the posited PMx consonantal alternations but refer the reader once more to the discussion above. Of some pertinence here also is the material presented on pages 68–9 of my Proto-Mixtecan study in that I discuss there in detail the provenience of Trique r in penultimate syllables.

Under *(n-)rewa/re?wa/newa *mouth, tongue, say, eat, stomach* (OMHMM, 102) Swadesh brings together Trique du$^{3}$?wa$^{3}$ *mouth* and ta$^{34}$h *say*—presumably to substantiate his claim that *r gives Trique d/t. But while Trique du$^{3}$?wa$^{3}$ *mouth* along with M yū?ū *mouth* and C dūūvi *mouthful* (my set 226) hark back to PMx *yi$^{2}$?wɔ$^{2}$, *θi$^{2}$?wɔ$^{2}$, *$^{n}$di$^{2}$?wɔ$^{2}$ (C u before labials is diagnostic of PMx penultimate *i), Trique -ta$^{34}$h *say* (rather ga$^{3}$ta$^{34}$h) along with M $^{n}$dūsù *tone, voice, čísó to reply, add* and C $^{n}$dūūdū *word* (my set 207) hark back to PMx *kɔ$^{2}$θɔ$^{3}$, *$^{n}$dɔ$^{2}$θɔ$^{3}$ (with *11 tone sandhi variant). The former set embraces a PMx noun belonging to a paradigm type of frequent occurrence (*θ* declension); the second set embraces a PMx verb belonging to a verb paradigm of which only the third and fourth forms have survived (cf. Proto-Mixtecan, p. 56 ff. where reconstructed verb conjugations are discussed in detail). Note also that the two sets contrast as to reconstructed consonants and belong to different PMx tone classes. In this same set Swadesh also includes M *yuva *stomach*. But such forms as Jicaltepec Mixtec yuva *stomach*, C čì-dáāví *heart*, and Trique ru$^{3}$wa$^{23}$ *insides of* hark back to still another PMx root *-wa (my set 188). Such a bringing together of disparate forms in languages where etymologies may be checked causes one to regard with considerable scepticism the pertinence of further resemblant forms quoted not only from Huave, Zapotecan, Popoloc, Chocho, Ixcatec, Mazatec, and Otomi-Pame-Mazahua but also in Caddo, Wiyot, Yurok, Yuki, Xinca, Tlappanec, Subtiaba, Omurano, Yururo, Coto, Arawakan, Takelma, Yokuts, Wakash, and Molale! English maw or mouth or even lan(guage) are as likely candidates for 'cognates' as are some of the forms cited. Genetic relationships are not proven by endlessly piling resemblant form on top of resemblant form.

In the last set of this section of his paper Swadesh associates Trique n·e$^{35}$ *flesh* (erroneously transcribed with vowel i) and tɥ$^{3}$ *blood*. The former word apparently ties in with M kùñū and C yúútà *flesh* (my set 178) and reconstructs as an originally monosyllabic PMx noun—as witnessed to by the disparity of M, C penultimate elements along with presence of consonantal alternation in the ultima (consonantal alternation, if present, usually occurred initial in the forms): *ya$^{42}$(m), *ta$^{42}$, *na$^{42}$ (with tone sandhi variant *$^{41}$) *flesh*. The latter Trique noun tɥ$^{3}$ *blood* is cognate with the Mixtec and Amuzgo forms which Swadesh cites as well as with C yūū? *blood* which he doesn't cite (my set 258). This latter set reconstructs as PMx *yo$^{3}$m(?), *to$^{3}$m *blood* (with reduplication in Mixtec dialects). Until some way can be found to

associate PMx stems in *a versus those in *o—not to mention the fact that these two sets belong to very different tone classes—these sets must remain apart at least on the Proto-Mixtecan horizon.

**4.6.** Swadesh's section on phonology of vowels begins with the admission that 'we do not attempt to give more than some generalities on the development of vowels' (OMHMM, 104). Aside from a suggestion that Macro-Mixtecan was characterized by vowel alternation—a feature which apparently need not be reconstructed for Mixtecan proper and which remains to be demonstrated for Macro-Mixtecan—the one other important suggestion of Swadesh is that 'There is evidence of assimilation to the consonants or the vowels of preceding and following syllables' (OMHMM, 104). This rather innocuous statement is then offered as a device to obviate expanding the inventory of Macro-Mixtecan vowels from the following six: i e a o u ï, with the further possibility offered of eliminating the last vowel listed. Apparently Swadesh particularly dislikes reconstruction of vowel *ɔ for Proto-Mixtecan (my Proto-Mixtecan study) and *ë for Popolocan-Mixtecan (Gudschinsky's study). Nevertheless, whatever anyone's personal preferences, vowel phonemes must be reconstructed in a given language family according to the exigencies of the sound correspondences with which we have to deal. No initial prejudice as to the number of vowels to be reconstructed can be permitted to decide the outcome. In particular the explanation offered by Swadesh to account for my PMx *ɔ is contradicted by several sorts of evidence. I do not summarize this evidence here for a very special reason, viz., I am now prepared to get rid of this PMx phoneme—but on lines quite different from those suggested by Swadesh. However, in that this matter is not without considerable theoretical and practical interest, I defer treating this matter until I am able to write an article on this particular subject. Meanwhile I cordially confess that without Swadesh's prodding I might not have reconsidered this matter as I have. On this and other points Swadesh is to be thanked for having provoked a lively and, on the whole, profitable discussion—in spite of the strictures contained in this paper.

# SOME PARTICULAR PROBLEMS IN THE APPLICATION OF THE 100-ITEM LEXICOSTATISTIC TEST LIST[1]

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**0.** Introduction
**1.** Problems of equivalence
**2.** Problems of cognation

**0.** It seems to be generally agreed that the translation of this or of any other list of isolated words or glosses into another language is almost sure to present some problems, the difficulty of whose solution should be neither underestimated nor exaggerated. And since the nature and number of such problems differ from one target language to another, the exposition of those that are encountered in any particular case may have a more general interest.

On the other hand, comparison of basic vocabulary from several Arawakan languages reveals a disconcerting number of partly cognate equivalents; under which term I shall include not only pairs of compounds containing both cognate and non-cognate members, but also any compound or one-time compound and such of its simple equivalents as are cognate with one member —cf., meaning *tail*: Baré ihibi, Lokono ihi and Guinao -ibi. Clearly, in such cases, imperfect understanding of the morphology, uncertainty as to a particular morpheme's relevance to the comparison, or even ignorance of a word's history may lead to distorting the count of 'glottochronologic sames.'

**1.** The first question to be answered in the case of Island Carib is: men's speech or women's speech? According to Raymond Breton's dictionary of the dialect spoken in Dominica toward the middle of the 17th century, men and women then employed different terms for 50 of the 100 items on the diagnostic list. And according to my own record of the Central American dialect, made three hundred years later, they still employ different terms for four of these items, and may do so for a fifth; thus (men's speech, women's speech): *I* áu, nugúia, *thou* amóro, bugúia, *woman* uóri, hi̯áru, *man* uogóri, eiéri and *rain* gunúbu, húia—the last men's term (gunúbu) probably being obsolescent (by which I mean: known, but rarely if ever employed colloquially).

No problem would exist here if one could posit two dialects; but this seems as unrealistic at the present time as it would be to assign skirts and trousers to different subcultures. Sex-differentiated forms of speech (which include grammatical as well as lexical features) first begin to appear in adolescence; and are adopted, rather gradually, to different extents by different individuals. When quoting one another, either sex automatically employs the other's forms; and a few young women regularly speak like men. Among obsolescent words are some that belong to the men's speech, and others that belong to that of the women; although the former are more numerous as far as my record goes. No member of the four pairs glossed *I*, *thou*, *woman* and *man* is at all obsolescent; but it is my impression that young men employ the women's nugúia and bugúia, young women the men's uóri and uogóri, more readily than the former would employ women's hi̯áru or eiéri, or the latter employ men's áu or amóro. Under these circumstances, it seems neither more nor less legitimate to choose

[1] I wish to thank Dell Hymes for reading an earlier draft of this article, and making several suggestions for its improvement.

the women's terms on the grounds that these, like the structure of the language as a whole, are Arawakan, while the men's terms have been borrowed from a Cariban language, Karina, than it would be in filling out the list for present-day standard English to select 'belly' rather than 'stomach' on the grounds that the former is inherited and the latter borrowed.

The test list makes no provision for grammatical gender, which, in Island Carib as in most Arawakan languages, determines the form of some words like those glossed *this* and *that*. In such cases it is important that both (or all) forms be given; for the marked member of a generic opposition in one language may correspond to the unmarked member of that opposition in another with which comparison is made. Thus, Island Carib has: líka > líha > lea *this-masc.* and líra *that-masc.*, túka > túha > toa *this-fem.* and túra *that-fem.*; feminine gender being unmarked in the speech of the men, but marked in that of the women. In related Lokono, on the other hand, líhi > li *this* and líra *that* are for both sexes clearly marked in their opposition to túhu > tóho > to *this* and túra > tóra *that*; the former being applicable only to human males, while the latter may refer to anybody or anything else.

There seems to be no Island-Carib word whose only or even principal meaning is *seed*. One says: tíla hacúru *seed of the bayberry tree* (*Pimenta racemosa* Miller) and ti iúri *tobacco seed*; in which tíla and ti both mean *its seed*. But ílao (-ila) also means *contents* or *meaning*; and hi (-i) also means, according to context, *fruit*, *egg* or *son*. This is less surprising when we remember that cultivation throughout most of South America and the Caribbean was and is carried out by vegetative planting rather than by sowing; and for this reason it might be wise to substitute *flower* (*blossom*) or *fruit* (*berry*) for *seed*. But if *seed* is to remain, ílao, whose principal meaning seems to be *contents*, may be preferable to hi, whose principal meaning seems to be *fruit* (*in relation to its bearer*), because the latter is required not only for the item *fruit* of the supplementary list, but also for *egg* of the diagnostic list.

Since there were no horned animals in the Lesser Antilles at the time when they were discovered by Columbus, it is hardly surprising that their native inhabitants had no word for *horn*. But by the middle of the 17th century, aríkai (*external*) *ear* had been extended to include this new meaning, and is still so employed (in its Central American form, arígai) by some of the Black Carib; although, others, who raise cattle, have borrowed Sp. gancho *hook or crook* as gácu *horn*. This being so, it might seem justified to replace the item *horn* by, say, *wing* (arónao, -aróna) from the supplementary list.

There can be but little doubt that aríkai > arígai (*external*) *ear* (also *corner*, as of a house) is to be preferred to úkuiuku > úhuiugu *organ of hearing proper*, *aural orifice*; for the former is mentioned frequently, the latter infrequently.

For the gloss *cloud* we must choose between: ubéku > ubé(h)u *high clouds*, *sky* (which has as competitor in the latter reference borrowed siélu), ualíu > huárju *dark cloud* and—at least for the early period—alíru *white cloud* (unattested for the Central American dialect). Here—unless it were decided to substitute some other gloss, such as *shadow*, or *lightning*—one of the latter words would seem to be preferable, since their referents are more apt to be heeded and, therefore, mentioned.

Out of several apparent synonyms for *die* of the early period of contact, two have survived: áue and hílara (hila-). These, together with their inflected forms and derivatives, are usually translatable today by *die*, *dying* or *death* in the case of the first form, *died* or *dead* in that of the second. Yet they are not suppletive, nor even synonymous. If I am right in believing that the former refers to a process (*to die*)

rather than to a state, the latter to a state (*to be dead*) rather than to a process, then áue is presumably the form best suited to fill this item on the list.

There are several unrelated forms that are translatable by *come*; cf.: (n)iób(u)iti *he came*, colóhali *he has come*, iníte *he is coming* and higábu iá (women) or áho ié (men) *come here!* However, the last two forms are purely imperative; iníte belongs to a series of locators in which the meaning *come* is borne by the suffix -te; and acólora (colo-), despite its very frequent employment in situations where we should use 'come', may be more accurately rendered by *arrive* or *reach* (*destination*). This leaves us with (n)iób(u)i, to which aspectual and personal suffixes are usually added, and related -iábi (a nominal form) to which a personal prefix must be added.

The verbs áta *drink*, áika > áiga *eat*, ísika > íciga *give* and their stems are replaced in some constructions by kúra > gúra, káu > háu and ru respectively; although it is not possible to say that the former are in any way defective so far as morphology and syntax are concerned. This may be explained by the fact that áta, áiga and íciga assume, in some constructions, a specialized reference that they do not have in others; and must therefore not be employed in the former unless such special reference is intended. No problem arises once this is known; but might well do so in cases where texts or a dictionary alone were depended upon and failed to make these facts clear.

For the meaning *lie*, Breton offers a bewildering choice of forms, translated by: 'couché tout de long sur le dos', 'couché, ramassé tout en un croupon', 'couché sur le ventre', 'couché sur le costé', etc. At least two of these have survived: ráụia- > ráụ-, which corresponds to the first and—today at any rate—fourth of these glosses, and pamu- > famu-, which corresponds to the third. The former is probably the correct choice; although the latter form and the position to which it refers are in equally frequent use.

It is tempting to translate the isolated glosses *hot* and *warm* by Island-Carib so- or hara- and basa- > baca- respectively. And since the first of these forms may also mean, according to context: *stinging*, *roasting*, *scalding* or *burning hot*, its elimination seems justified despite its frequent employment in situations where we use 'hot'. But then I must confess that the difference, if there be one, between the referents of haráugati dą and bacáugati dą escapes me—just as does that, if there be one, between the referents of these forms' possible translations, *hot weather* or *warm weather*. Certainly there are contexts, in Island Carib as in English, where only one of the two forms (I.C. baca- or hara-, Eng. hot or warm) is employed; but there seems to be no regularity of correspondence as between these two languages in the type of reference that calls for one or the other form. On the contrary, hara- *hot or warm* can be used only in reference to dry heat (fire, sun, etc.); and only baca- *hot or warm* can be used in reference to a liquid, although it is not restricted to such use. So that the choice here lies not between the alternative glosses, *hot* or *warm*, but between the alternative referents: *hot and dry* or *hot / warm*, which latter carries with it some connotation of *wet* or *moist*.

Breton tells us that the Island Carib had names for only four colours: *yellow*, *red*, *black* and *white*; and one of these, húere- *yellow*, has now been lost, and replaced—according to some informants—by dumári, which is, primarily, the name of a kind of sauce. The form for *red* (puna- > funa-) also meant and means *ripe*; while that for *black* or *dark* (uli- > uri-) also meant *blue* or *green*, and still retains the latter meaning in reference to vegetation (for *blue*, dígu has been borrowed from 'indigo'). However, in most if not all of the latter form's occurrences that may be translated *green*, we find ulikei- > urigi-, whose suffix -kei > -gi may

be translated by *still* or *yet*; implying that reference is to a phase rather than to an inherent tint. And for these reasons it may be doubted whether dumári and uri(gi)- are truly comparable to the glosses *yellow* and *green*.

So far as the modern Central American dialect of Island Carib is concerned, at least eight of the twenty difficulties listed above can be resolved with confidence: *rain* húia, *this* and *that* by giving both genders, *ear* arígai, *come* (n)iób(u)i, *drink* áta, *eat* áiga and *give* íciga; and four more may be settled with some show of reason: *seed* ílao (-ila), *cloud* huárịų, *die* áue and *lie* raų-. But only an arbitrary decision seems possible in the case of the four sex-differentiated items (*I, thou, woman, man*); while omission or substitution might seem advisable in the cases of *horn, hot, yellow* and *green*. The remaining 80 items of the diagnostic list can be given for this dialect as follows:

*we* uagía; *who* ka; *what* ka; *not* má(ma); *all* sų; *many* gibe-; *one* ábana ~ ábą; *two* bíama; *big* uáiri-; *long* migife-; *small* niórao-; *person* mútu; *fish* údurao; *bird* dunúru; *dog* áųli; *louse* ịęi; *tree* uéue; *leaf* -ubána; *root* -ílagola; *bark* -úra; *skin* -úra; *flesh* ógorogo; *blood* hítao (-íta); *bone* ábu; *fat* agólei; *egg* -ị; *tail* íli; *feather* -ubána; *hair* ídiburi; *head* icógo, icígo; *eye* águ; *nose* ígiri; *mouth* -íuma; *tooth* ári; *tongue* -ięie; *claw* -úbara; *foot* ugúdi; *knee* -gácorogo; *hand* úhabu; *belly* urágai; *neck* -igína; *breast* -úri; *heart* anígi; *liver* -ubána; *bite* goro-; *see* aríha; *hear* agąba; *know* subúdi-; *sleep* arúmuga; *kill* áfara; *swim* áfuliha; *fly* hamą-; *walk* áibuga; *sit* (n)iụ-, niuru-; *stand* arárama; *say* erẹga; *sun* uéiu; *moon* háti; *star* uarúguma; *water* dúna; *stone* dóbu; *sand* ságaų; *earth* múa; *smoke* gumúlali; *fire* uátu; *ashes* balígi; *burn* águda; *path* óma; *mountain* uóbu; *red* funá-; *white* harú-; *black* urí-; *night* áriabu; *cold* dili-; *full* buí; *new* iséri; *good* buídu; *round* giríri-; *dry* mábai-; *name* -íri.

All except one of the above eighty forms are clearly cognate with forms of the early Dominican dialect similarly glossed (in French, of course) by Breton; the exception being mútu *person*, which replaced iláku (women) and itánuku (men) of Breton's record in the recent Dominican, recent Vincentian and Central American dialects alike, and appears to have been borrowed from some African language. But buítu > buídu *good* must also be disallowed; for its principal reference has shifted from *good looking* to *good* = *efficient* (and contrariwise that of irúpaų- > irúfų- has shifted from *good* = *efficient* to *kind*). Moreover, 35 of the other 78 forms are labelled "f." (= women's speech) by Breton, who gives for them men's equivalents that are now lost or have changed their meanings; and three more appear as then belonging to the men's speech, together with women's equivalents that are now lost (kási *sun*) or have changed their meanings (ulíbịų *bird* > *sp. of bird*, ánaka *swim or paddle* > *paddle*). And Breton often gives alternative, apparently synonymous forms of the general language, as, e.g.: "*il est rond* chiríriti, chígueti"; so that filling out the diagnostic list for this early dialect is more hazardous than in the case of that spoken in Central America today.

So far as the twenty items chosen for discussion are concerned, Breton gives apparently equivalent cognates for all the forms cited here, and, in addition, men's terms (not cited here) for *die, eat, drink, lie* and *give*. Also nébui (modern C.A. nióbui) and asílera, sile- (modern C.A. acólora, colo-) are given by him as men's and women's equivalents for *come*, which their present-day reflexes certainly are not; and ubéku, glossed in one place as *le ciel, le temps, les nuës*, is given in another under *les nuees*, together with "*nuage blanc* allírou" and "*nuage noir* ouallíum".

If we fill in the diagnostic list for the Dominican dialect of circa 1650, taking, where there is a choice, the first-listed women's term for each item, and again for the Central American dialect of circa 1950,

also choosing the women's terms and accepting, besides the alternatives here regarded as preferable, arígai *horn*, baca- *hot*, dumári *yellow* and uri(gi)- *green*, we find the following non-cognate sets: *person* iláku and mútu, *bird* ulíbịų and dunúru, *yellow* húere- and dumári, *good* irúpaų- and buídu, *sun* kási and uéiu, *swim* ána(ka) and áfuliha, and—unless Breton should have been mistaken; for he glosses sile- and asílera by both *arriver* and *venir*—asílera (sile-) and nióbui *come*.[2]

Such slight divergence (93/100 or 94/100 glottochronologic sames) probably means little or nothing; yet it is interesting to note that the date indicated for the dialectalization of Island Carib coincides with a marked increase of European travel to the area in the second half of the 16th century.

When we seek for other Arawakan languages with which to compare Island Carib, Lokono or True Arawak presents itself as the one concerning which the largest amount of material is available. Yet this material is less complete and less reliable than Breton's record of Island Carib; and even the latter does not allow us, as we have seen, to fill in the diagnostic list with every confidence.

Nevertheless, and before discussing problems of cognation, it may be of interest to present such lists for Lokono and other Arawakan languages as I have been able to compile. But having had no personal contact with speakers of these languages, I can do little more than list (and treat as doubtful) alternative forms for the same item, as given either by different investigators or by the same one. Moreover, while the Lokono list is complete, the value of the others is further diminished by their defective nature. So: Lokono (100 items), Goajiro (84), Piapoko (75), Ariti or Paressí (89), Baniva (68), Manao (57) and Baré (56). In order to avoid unnecessary repetition of the glosses, they will be referred to by number as follows:

1 I, 2 thou, 3 we, 4 this, 5 that, 6 who, 7 what, 8 not, 9 all, 10 many, 11 one, 12 two, 13 big, 14 long, 15 small, 16 woman, 17 man, 18 person, 19 fish, 20 bird, 21 dog, 22 louse, 23 tree, 24 seed, 25 leaf, 26 root, 27 bark, 28 skin, 29 flesh, 30 blood, 31 bone, 32 fat, 33 egg, 34 horn, 35 tail, 36 feather, 37 hair, 38 head, 39 ear, 40 eye, 41 nose, 42 mouth, 43 tooth, 44 tongue, 45 claw, 46 foot, 47 knee, 48 hand, 49 belly, 50 neck, 51 breast, 52 heart, 53 liver, 54 drink, 55 eat, 56 bite, 57 see, 58 hear, 59 know, 60 sleep, 61 die, 62 kill, 63 swim, 64 fly, 65 walk, 66 come, 67 lie, 68 sit, 69 stand, 70 give, 71 say, 72 sun, 73 moon, 74 star, 75 water, 76 rain, 77 stone, 78 sand, 79 earth, 80 cloud, 81 smoke, 82 fire, 83 ashes, 84 burn, 85 path, 86 mountain, 87 red, 88 green, 89 yellow, 90 white, 91 black, 92 night, 93 hot, 94 cold, 95 full, 96 new, 97 good, 98 round, 99 dry, 100 name.

Lokono—1 dakia; 2 bokia; 3 uakia; 4 tuhu > to, lihi > li; 5 tura, lira; 6 halika-, hama; 7 halika-, hama; 8 koro; 9 -makua; 10 (o)ioho; 11 aba; 12 biama > bian; 13 ipi- > ifi-; 14 uadi-; 15 ibi-; 16 hiaro; 17 uadili; 18 (o)loko; 19 hime; 20 kudibiu; 21 pero; 22 -ie (üiehi); 23 ada; 24 -si (ísihi); 25 -(o)bana; 26 ühükere > ekura; 27 -(u)da; 28 -(u)da; 29 isiroko; 30 -tena (ütü); 31 abonahahu; 32 ikihi; 33 -sa (üsa); 34 (o)koa; 35 ihi; 36 (o)bara; 37 (o)bara; 38 -si (ísihi); 39 -dike (adikehi); 40 akosi; 41 -siri (isirihi); 42 -leroko (ülerokohu); 43 ari; 44 -ie (üiehi); 45 -(o)bada; 46 -(u)kuti; 47 -(o)koro; 48 -(o)kabo; 49 -dibeio (adibeio); 50 -(o)noro; 51 -(i)diu; 52 uasini, ulua; 53 -(o)bana; 54 ata; 55 eke, akuta; 56 arda, akuta; 57 adika; 58 akanaba; 59 adita > aita; 60 adonka; 61 ahoda; 62 apara > afara; 63 atima; 64 amorda; 65 akona,

[2] I may have been too ready, in what has been said above, to reject modern acólora (colo-) as the nearest equivalent to our *come*; for it alone is possible in such a construction as: cóloti dą́ *the time came* (*when* . . .). To judge by the occurrence of nióbui and acólora (colo-) in my texts, the former always refers to actual locomotion, the latter to attainment of place, time, condition or state; neither can be employed with imperative function.

aiahada; 66 anda; 67 aiakada; 68 abalta; 69 adinama; 70 isika; 71 adia(ka); 72 hadali; 73 kati; 74 uiua; 75 oniabo; 76 onikia; 77 siba; 78 motoko; 79 hururu; 80 uraro; 81 (u)kulehe; 82 hiket(i) > hikihi; 83 balisi; 84 ibitua; 85 uaboroko, abunahahu; 86 fororo; 87 kule- > kore-; 88 imoro-; 89 subule-; 90 halira-; 91 karime-, ulehi-; 92 kasakodahu, ulikahu; 93 tere-; 94 mimi-; 95 (i)be-; 96 emelia-; 97 (o)sa-; 98 balala-, (a)koadu-; 99 uaa-; 100 -ri (irihi).

GOAJIRO—1 taya; 2 pia; 3 waya; 4 ti, ci; 5 tira, cira; 6 haraih, hanna; 7 kasa, hama; 8 noho; 9 -puśua; 10 maima; 11 wanee; 12 piama; 13 mulia?u; 14 ka?apu; 15 cịkini; 16 hiieer; 17 haśicci, toola; 18 wayuu; 19 hime; 20 ucii; 21 eri; 23 unu?u; 24 -si; 25 -pana; 27 -tah; 28 -tah; 29 i?iruku; 30 -iśa; 31 himpu; 34 uuwa; 35 -sih; 36 sumurera; 37 -wala (walaś); 38 -ikii (ekiwi); 39 ace?e; 40 a?u; 41 -ici; 42 aanika; 43 aai; 44 iyee; 45 -upatau; 46 -?uih; 48 ahappu; 50 anuulu; 51 -ira; 52 aị; 53 -pana; 54 asa; 55 ika-; 57 ira-; 58 aapi-; 59 atiha; 60 atụka; 61 áuktaa; 62 auktáa; 64 awatti-; 65 a?una; 66 ent-; 68 aikkala-; 70 -usiliha; 71 aiśaha; 72 kaih; 73 kaśih; 74 śiliwala; 75 wiị; 76 aikteer; 77 ihpah; 78 muaku; 79 mah; 80 siruma; 81 akoomih-; 82 sikih; 83 pari; 84 -?aha; 85 wopuh; 86 uuci, urapa; 88 wihti-; 90 kasutai-; 91 mutsia-; 92 ali; 93 ha?is-; 94 saamat-; 97 anaas-; 100 ini.

PIAPOKO—1 nua; 2 pia; 3 wia; 4 wai, iai; 5 waide, iaide; 6 kamina; 7 keno, kamina; 8 kamita; 9 abe(da); 10 manuwakana; 11 aberi; 12 puɕeyba; 13 manui-; 15 aɕume-; 16 inanai; 17 asieri; 18 wenaika; 19 kubai; 20 kuipira; 21 auri; 23 ahiku; 25 -bana; 28 imasi, imami; 29 inasi; 30 irana, irai; 31 api; 32 iesi; 33 ieve; 37 baynasi; 38 iwita; 39 -ui; 40 -tu-i; 41 -iaku, -teku; 42 -numa; 43 -ieisi, -yai; 44 -nene; 45 -uba; 46 -bari; 47 -lui; 48 -kapi; 49 -uade; 51 -ini; 54 (h)ira; 55 -yaka; 57 -ika; 59 -iewari; 60 (u)imaka; 61 ćekaimi, ćekauma; 65 -akawa; 66 sisare-; 68 -awina; 70 -anu(ri); 71 -maka; 72 gamui, eri; 73 keri; 74 nuluputa, duruputa; 75 uni; 76 unia; 77 hiba; 79 kari; 81 isa; 82 kitre, kiće; 83 bali; 85 ayapu; 86 iba; 87 kire(ri); 88 ipure(ri); 89 eweri; 90 kabare(ri); 91 kuri(ri); 92 kata; 93 ureke; 94 kasarinika; 97 kayave(ri); 100 -ire.

ARITI (PARESSI)—1 natiu; 2 isun; 3 uisun; 4 ii; 5 iita; 6 sala; 7 suali; 8 kani; 9 manini; 10 ta; 11 hatita; 12 hinama; 13 kalu; 14 kalukua; 15 asi, ani; 16 uilu; 17 ina; 18 aliti; 19 kohasi; 20 kutiala; 22 nilisati; 23 at(i)a, kati; 24 esi, ilia-kati; 25 iauali; 26 itia-ali; 28 meli; 29 inete; 30 itimara(ne); 31 nahe; 33 i(nu)si; 35 enihu; 37 siui; 38 siuili; 39 -tine; 40 iusi; 41 kiri; 42 kanasi; 43 aikuli; 44 ninise; 45 (n)utia; 46 kisi; 47 iuku; 48 kahe; 49 muku; 50 inu; 51 tutuni; 52 maikasi; 53 tiakuli; 54 ira-; 55 nisa-; 56 tialuka-; 57 uaia-; 58 sima-; 59 ilia-; 60 maka-; 61 kamani; 62 (i)aisa-; 63 maiakua-; 64 iainakua-; 65 tuna-; 66 tiua-; 69 titua-; 70 isa-; 71 i, ni-; 72 kamai; 73 kairi; 74 iulisi; 75 uni; 76 unila; 77 sihali; 78 kaiuului; 79 iukuari; 82 ilika; 83 tiuai; 85 au; 86 tiaili; 87 iutili; 88 iula; 89 usika; 90 iumili; 91 (k)ia; 92 aiatini; 93 uatili; 94 tiaia, uai; 96 itilu; 97 uaiali; 98 ikusi, uku; 99 iuni; 100 iuali.

BANIVA—1 noyaha; 2 piyaha; 3 uayaha; 6 dali; 7 ići; 8 iaha; 9 payari; 10 suberi; 11 peyaro; 12 tonüalba; 13 sućíni / sorsiini; 15 suitini; 16 néyawa; 17 (h)enami; 18 mamari; 19 kuphe, sima(s)i; 20 ućipie; 21 ɕinu; 23 atabi; 25 ɕaape; 28 mada; 29 miɕi; 31 api; 35 pisi; 36 uidoho; 37 -ɕipana, -ćipina; 38 -no(m)bu; 39 -dani-; 40 -iti; 41 itaku; 42 enumá; 43 -arsi / -aɕi; 45 sulavesi; 48 -nú; 49 -neni; 51 -tosi; 52 -neni-tüana; 53 -pane; 54 -korua; 55 -mika; 57 -dama; 60 -ɕima; 61 -nioua; 62 -ma(m)i; 65 -saba; 66 -nuba; 70 -tana(ia); 72 hamuri / amorsi; 73 arhita / arsita / aćita; 74 hiwiri, wiwinari, asoroperi; 75 weni; 76 yawa weni; 77 (h)ipa; 79 yaɕiphe; 81 ćaouiri; 82 arsi / aći; 83 paliɕi; 84 -ietaa; 85 tanepo; 86 yapa; 89 tewali; 90 yarana-; 91 sereri; 92 yarapu / yarsapue; 93 a(r)te; 94 apate, apatiwali; 97 anetua; 100 -sinaa.

MANAO—1 no; 2 pi; 3 uena; 6 kapasai; 7 kapeda; 8 me(h)e; 10 ulila; 11 panimu; 12

piarukûma; 13 panumala; 15 taja-mohoyuha; 16 itunalo; 17 (h)erenari; 18 baura; 23 ata; 25 ata-âna; 26 ata-üeti; 27 ita; 28 -ta(pi); 30 ira(ti); 37 -küuna iti; 38 -küuna; 39 -teki; 40 -kurika; 41 -kiria; 42 -numa; 43 -ai; 44 -neta; 45 -nyupata; 46 -kii; 48 -kaita; 49 -tula, -tuba; 50 -nobi; 51 -tüna; 52 -nike; 54 -tüira; 55 aića; 57 pata; 58 -kimutapa; 60 -atümaka; 61 -amatüka; 66 kaidö-, ka(i)di-; 71 -tinika; 72 kamui; 73 kairi; 74 boibâli; 75 unüa; 77 kü(j)a; 79 etee; 82 kükati; 86 mapapâna; 87 pôti; 89 tauâti; 90 palihati; 91 püküli; 92 yetila; 97 sabi.

BARE—1 nu-; 2 bi-; 3 ue-; 11 bakonakei; 12 bikonana; 15 hani; 16 hiniateti, ineituti; 17 heinari; 19 kobati; 21 cino; 23 ada; 25 dabana; 28 ida; 30 iya; 31 abi; 33 -eniko; 35 ihibi; 37 -itahai; 38 -dosia / -totia, dzibana; 39 -dateni; 40 -oíti; 41 -ti; 42 -numa; 43 -ahei; 44 -nene; 46 -isi; 48 -ukabi; 49 -tula / -dula; 50 -nu; 51 -doko 52 -kauasei; 53 kabale; 55 -nika; 60 -domka; 61 adauikana; 70 -aniko; 71 -maha; 72 kamo(ho); 73 ki; 74 uineti; 75 uni; 76 hiya; 77 tiba; 79 kadis; 82 kaméni; 83 bariǵi; 85 dinabu; 86 siaba; 87 kiani; 89 uituni; 90 baline / baharini; 91 kulini, taini; 93 takani; 94 fikehene; 97 idoare; 100 inaha.

**2.** So far as comparison with Island Carib is concerned, the ten doubtful items of the Lokono list (6, 7, 52, 55, 56, 65, 85, 91, 92 and 98) could affect the score in not more than three cases: L eke being cognate with IC áika > áiga *to eat*, L ulehi- with IC uli- > uri- *black* and, very doubtfully, L ulikahu with IC ariabu *night*. It is true that L uaboroko is, in all probability, partly cognate with IC mábu, which Breton glossed *la route d'un bois* and *sentier*, and which now means *way*, *journey*; but Breton does not equate mábu with éma (némali) *chemin* (*mon chemin*), which apparently was —and certainly is in its Central American form, óma (némari)—the everyday word for *path* or *road*. On the other hand, choice of Island-Carib alíru (instead of ualíų > huárių) for the item *cloud* would add another indeterminate pair, since this word is only possibly cognate with Lokono uraro; and though there seems to be no doubt as to the equivalence of Lokono adinama and Island Carib arárama, meaning *stand*, I hesitate to accept them as cognate because, while d : r and m : m are regular correspondences, n : r and i : a are not (although this might well be a case of assimilation).

But four other pairs, as between Island Carib and Lokono, present the special kind of problem that was mentioned in my second paragraph; these are: I.C. ísik or isóko > icígo or icógo and L. -si (ísihi) *head* (38), I.C. áku > águ and L. akósi *eye* (40), I.C. ékriko > ógorogo and L. -síroko (isírokohu) *flesh* (29), I.C. ábu(hu) and L. -abúna (abúnahahu) *bone* (31).[3] Now L. -si / ísi- (-hV is, in all these forms, a marker of the absolute noun) means not only *head*, but also *seed*, *top or tip* (*distal end*); and its I.C. cognate, though not attested in free form, may most probably be recognized in isíuna > igína *neck* (cf. íuna *stem*, *proximal end*) and a number of one-time compounds such as ísiri > ígiri *nose*, isíbu > igíbu *face* and in the word for *head*, whose second member may not improbably be identified with óko > ógo *nucleus*, *core*, etc. And similarly, when we compare L. akósi *eye(s)* with its akóke *eyelid(s)* and akóloko *in the eye(s)*, it becomes evident that these words are or were compounds containing -si *seed*, etc., -ke (éke) *cover*, *container*, or -loko (olóko)

[3] Or L -abóna (abonahahu) *bone*, depending on the record. In all older records of Lokono (and especially in the anonymous Arawakisch-Deutsches Wörterbuch), u appears much more frequently (for the vocabulary as a whole) than o, though six vowels are written (i, ü, u, e, o, a); while the reverse is true of more modern records—e.g. that of Nancy Hickerson, who writes only five vowels: i, u, e, o, a. A correspondent now in Guiana (but who has not yet, however, completed his investigation) tells me that he finds only four vowels in this language: a, i, o, e; which "means that there is no phonemic difference between [o] and [u], or between [E] and a shwa-sound."

*interior*, together with a cognate of the Island Carib word for *eye(s)*; although as a free form L. áku (or áko) is glossed (in German) by *'in, an, auf, über* ('*in über*' sonderlich vom Feuer und Wasser)".

It is not clear what were the components of either the I.C. or the L. word for *flesh* (though cf. I.C. óko > ógo, cited above); but while their second halves are most probably cognate, such obvious correspondences as are seen in I.C. ísiri : L. ísirihi *nose* and I.C. ilíkini (> ilógoni) : L. ilíkin *pet or other living property* make it impossible for us to accept a correspondence of I.C. k > g : L. s in this or any other word without explanation. Finally, L. -abúna clearly contains a morpheme not present in I.C. -ábu (*bone*); though whether this absence should be attributed to omission or to phonetic reduction is not quite certain. If, as seems likely, -abu of the Lokono and Island-Carib forms meaning *bone* is identical with -abu of the same languages meaning *with, underlying, bearing*, then -na of Lokono -abúna is probably identical with the same language's -(i)na (üina) *proximal part or end, stock*, and cognate with Island-Carib -(i)na (íuna), which has the same meaning. As second member of a compound, the latter morpheme would not have been lost in Island Carib any more than in Lokono; but in the reverse order (cf. Mehinaku inapü *bone*), loss of n would be regular in both (cf. Lok. hiaro, I.C. hi̯áru and Meh. teneru, all meaning *woman*).

Some idea of the frequence with which such problems are met in comparing Arawakan languages may be gathered from the following table, where these and four other items (to be discussed below) are shown for the eight languages already listed, plus Guinao.

| HEAD | EYE | FLESH | BONE | LEAF | TAIL | EAR | RAIN |
|---|---|---|---|---|---|---|---|
| I.C. ísik, isóko | áku | ékriko | -ábu | (ar)ubana | íli | arikai | húia |
| Lok. ísihi, -si | akósi | isíroko | -abúna | (ad)obana | íhi | adikehi | oni-kia |
| Goa. ekiwi, -ikii | aʔu | iʔiruku | himpu | -pana | -sih | aceʔe | aikteer |
| Pia. iwita | -tui | inazi | -api | -bana | — | -ui | unia |
| Ari. siuili | -iusi | inete | -nahe | iauali | enihu | -tine | unila |
| Ban. -nobu | -iti | mi¢i | ¢imápi, -piuna | ¢aape | -pisi | -daani | yawa weni |
| Man. -küuna | -kurika | ——— | ——— | ata-âna | ——— | -teki | ——— |
| Baré -dosia | -oíti | ——— | -abi | dabana | ihibi | -dateni | hiya |
| Gui. -inceue | -auíźi | ——— | -abe | (da)bana | -ibi | -daźini | hiya |

The Goajiro words for *eye* and *flesh* show regular correspondences with their Island-Carib equivalents, but oppose the same difficulties as do the latter to acceptance as true cognates of the Lokono forms. On the other hand, Goajiro himpu (<*hin-apu?) *bone* is probably cognate with its equivalents in Baniva and Ariti (in which h or zero regularly corresponds to bilabial stops of other languages), but not with that in Lokono, since reversal in the order of morphemes may bring about a change of referent (cf. Lok. -inabu, glossed in German as *hinten darin*). Goajiro ekiwi *head* may have contained a morpheme cognate with the second part of its Island Carib equivalent; and almost certainly does contain a morpheme cognate with the first part of its Piapoko equivalent (cf. Lok. iui *fruit*, iuida *calabash*) and with parts of those in Ariti and in Guinao. The Baniva and Baré forms meaning *tail* appear to be—or to have been—compounds whose members, though cognate, are in reverse order; equivalents in the other languages listed, except Ariti, being simple forms cognate with one or the other of these members.

Lokono -bana and its cognates in many other languages mean not only *leaf* but also *liver*; and in Island Carib it may also refer, according to context, to *house* or to *feather*. Therefore it sometimes enters into composition, as in Lokono adobana *leaf*, Island-Carib dunúrubana *feathers*, con-

taining respectively Lok. ada *tree* and I.C. dunúru *bird*.[4] But such compounds appear to be employed only when the referent of -bana, etc. is not otherwise clear from the context, as it usually is. The case is somewhat similar to those seen in English 'bee' versus 'honey-bee', 'beet' versus 'beetroot', 'wax' versus 'bees-wax'; in which it would seem justified to regard the specifying member of the compound as irrelevant to the comparison. But whether or not there is the same justification in cases like those of the Lokono and Island-Carib forms for *head* and *eye* is more problematic.

Since Baré téma and Guinao zéma apparently correspond to their Lokono equivalent kama *tapir*, Baré -dateni and Guinao -daźini may well be cognate with their Lokono equivalent -dike *ear*—provided that -ni of the former makes no contribution to the range of reference required by the gloss.

Finally, since the Lokono, Piapoko, Ariti and Baniva forms glossed *rain* all clearly contain a morpheme oni or uni belonging to the same language and meaning *water*, it is tempting to see a similar origin in húia (which Breton wrote 'óya') *rain* of Island Carib; whose only attested word for *water*, *river* (túna > dúna) was certainly borrowed from Karina. However, comparison with other Arawakan languages shows that the relationship of húia is with the same language's aiákua > aiáhua *to cry* (*shed tears*) and ákuia > áhuia *to pour down or off* rather than with its -úini (attested in some hydronyms) **water*, *river*. So, compare (in that order), the Guinao, Baré, Yavitero, Adzaneni, Arekena and Karutana words for *rain*, *shed tears*, *water*: hiya, aia, oni; hiya, ihiyani, uni; ziya, haya, ueni; idza, idzaka, uni; ida, idaka, oni; itśa, itśaka, oni.

Having gone thus far, it would, I suppose, be pusillanimous on my part to shirk a glottochronologic count for the languages listed; but enough has been said to show that problems of equivalence and of cognation, combined with defective lists, much reduce the value of this undertaking. It may be noticed that the retentions scored for Lokono, Goajiro and Island Carib are considerably fewer than those given by me on page 155 of IJAL 24. This is because more data on Lokono and further study of the correspondences involved have revealed hitherto unforeseen difficulties of the type described above. But the published data on most of the languages examined here (or at least such as are available to me) remain woefully inadequate for purposes of comparison; so that the figures given below remain wide open to revision.

Moreover, it will be noticed that the same problem or type of problem arises more than once. If Lokono akósi *eye(s)*, as a compound or one-time compound, is noncognate with simple equivalents like Island Carib áku and Goajiro a?u, then Lokono balísi and Island Carib balísi > balígi cannot be cognate with their Goajiro equivalent, pari *ashes*; and similarly, Island Carib anísi > anígi *heart* and ariábu > áriabu *night* (cf. I.C. arábu > árabu *forest*, Lokono oniábo *water*, etc.) cannot be cognate with their simple Goajiro equivalents, aį (< ani) and ali.[5]

[4] Island Carib -íu *prickle, thorn*; *body-hair* may be employed also in reference to individual *feathers*; though -bana is more common, at any rate in a collective sense.

[5] Unless, of course, it can be shown either that the shorter form is the outcome of phonetic attrition, or else that it has resulted from the deliberate shortening of a longer form, as in the cases of Eng. cab < cabriolet and bus < omnibus. So far as simple forms are concerned (and, from the point of view of English, cabriolet and omnibus are such), there can be little resistance to the latter process; but a derived word cannot be shorn of its affix unless the meaning of the affix be lost and that of the stem changed, as in the case of OEng. gewinnan (< ge- *attain by* + winnan *struggle*) > Eng. win. And it seems clear that a compound cannot be replaced, in the same reference, by one of its members unless that member has no longer much other work to do in its occurrences as a free form, as in the case of Eng. maid = maidservant.

Island Carib and Lokono. Numbers shown in parentheses apply to the early Dominican dialect (dated circa 1650) only; others both to it and to the modern Central American dialect (dated circa 1950). Lokono forms, from coastal (British and Dutch) Guiana, may be most safely dated circa 1850; though to the best of my knowledge they are still valid at the present time. Thirty-six positive pairs (thirty-eight if early Dom. I.C. is used): 2, 3, 4, 5, 11, 12, 16, (18), (20), 22, 25, 26, 27, 28, 30, 32, 35, 39, 41, 43, 44, 45, 46, 48, 51, 53, 54, 55, 57, 58, 60, 62, 64, 70, 71, 73, 83, 100; and five indeterminate pairs: 29, 31, 38, 40 and 69. As both lists are complete, this gives 36/95 (and 38/95), or 37.9% (and 40%) retention.

Island Carib and Goajiro. Twenty-eight positive pairs (thirty if early Dom. I.C. is used): 2, 3, 4, 5, 12, 16, (20), 21, 25, 27, 28, 29, 30, 35, 39, 40, 43, 44, 45, 46, 48, 53, 54, 55, 60, 71, (72), 73, 79, 81; and nine indeterminate pairs: 7, 11, 17, 31, 41, 52, 64, 83 and 92. As only eighty-four items on the list could be filled in for Goajiro, this gives 28/75 (and 30/75), or 37.3% (and 40%) retention.

Lokono and Goajiro (the Goajiro dialect is modern). Thirty-six positive pairs: 1, 2, 3, 4, 5, 12, 16, 19, 20, 25, 27, 28, 30, 34, 35, 37, 39, 43, 44, 45, 46, 48, 50, 53, 54, 55, 60, 61, 65, 66, 71, 73, 75, 77, 78, 82; and fourteen indeterminate pairs: 6, 7, 9, 11, 17, 24, 29, 31, 40, 41, 59, 64, 83 and 85. This gives 36/70, or 51.4% retention.

Island Carib and Piapoko. Sixteen positive pairs (eighteen if the early Dom. I.C. dialect is used): 1, 2, 3, 11, 16, 17, (20), 21, 25, 31, 42, 44, 48, 55, 60, (89), 91, 100; and ten indeterminate pairs: 4, 5, 6, 7, 12, 32, 43, 45, 73 and 83. As only seventy-five items of the list could be filled in for Piapoko, this gives 16/65 (and 18/65), or 24.6% (and 27.7%) retention.

Lokono and Piapoko. Sixteen positive pairs: 2, 3, 11, 16, 20, 25, 44, 48, 55, 60, 75, 76, 77, 87, 88, 100; and twelve indeterminate pairs: 4, 5, 12, 31, 32, 43, 45, 65, 73, 82, 83 and 85. This gives 16/63, or 25.4% retention.

Goajiro and Piapoko. Fourteen positive pairs: 2, 3, 16, 20, 21, 25, 44, 48, 55, 60, 75, 77, 83, 85; and sixteen indeterminate pairs: 4, 5, 6, 7, 11, 12, 15, 17, 31, 38, 43, 45, 65, 73, 82 and 86. Since the lists for these languages have in common only sixty-nine comparable pairs, this gives 14/53, or 26.4% retention.

Island Carib and Ariti. Ten positive pairs (eleven if the early Dom. I.C. dialect is used): 1, 3, 12, 17, (20), 41, 44, 46, 48, 55, 60; and fourteen indeterminate pairs: 2, 4, 5, 6, 7, 11, 30, 31, 35, 39, 40, 43, 45 and 73. As only eighty-nine items of the list could be filled in for Ariti, this gives 10/75 (and 11/75), or 13.3% (and 14.7%) retention.

Lokono and Ariti. Thirteen positive pairs: 3, 12, 20, 41, 44, 46, 48, 50, 55, 60, 75, 76, 77; and twenty-one indeterminate pairs: 2, 4, 5, 6, 7, 11, 23, 24, 30, 31, 35, 38, 39, 40, 43, 45, 65, 70, 73, 82 and 85. This gives 13/68, or 19.1% retention.

Goajiro and Ariti. Sixteen positive pairs: 3, 12, 20, 24, 31, 44, 46, 48, 50, 55, 60, 75, 76, 77, 82, 85; and sixteen indeterminate pairs: 2, 4, 5, 6, 7, 11, 17, 30, 35, 38, 39, 41, 42, 45, 65 and 73. Since the lists for these languages have in common only seventy-six comparable pairs, this gives 16/60, or 26.7% retention.

Piapoko and Ariti. Eighteen positive pairs: 1, 3, 4, 5, 17, 19, 29, 44, 48, 54, 55, 60, 72, 73, 75, 76, 77, 85; and twelve indeterminate pairs: 2, 8, 11, 12, 28, 31, 38,

Describing his method of cognate determination in a recent issue of this journal (IJAL 24, p. 102), Kenneth Hale said: "Two items exhibiting a difference in length are considered cognate if part of one of the items shows correspondence to a part or the whole of the other." This principle would certainly provide an easy solution to a number of the problems discussed here; but would it be the right one? Would Hale—to take a concrete case—consider the one-time compound, Eng. nostril, and its simple French equivalent, narine, to be glottochronologic sames?

43, 45, 61, 79 and 82. Since the lists for these languages have in common only seventy-one comparable pairs, this gives 18/59, or 30.5% retention.

Island Carib and Baniva. Ten positive pairs (twelve if the early Dom. I.C. dialect is used): 1, 2, 3, (20), 31, 42, 43, 53, 60, 83, (89), 92; and nine indeterminate pairs: 11, 17, 35, 37, 39, 40, 51, 55 and 73. As only sixty-eight of the items on the list could be filled for Baniva, this gives 10/59 (and 12/59), or 17.1% (and 20.3%) retention.

Lokono and Baniva. Ten positive pairs: 2, 3, 20, 23, 53, 60, 75, 76, 77, 83; and twelve indeterminate pairs: 11, 19, 31, 35, 39, 40, 43, 51, 55, 73, 74 and 85. This gives 10/56, or 17.8% retention.

Goajiro and Baniva. Nine positive pairs: 2, 3, 20, 31, 53, 60, 75, 77, 97; and sixteen indeterminate pairs: 11, 15, 17, 19, 35, 39, 40, 43, 55, 73, 74, 83, 85, 86, 92 and 100. Since the lists for these languages have in common only sixty-six comparable pairs, this gives 9/50, or 18% retention.

Piapoko and Baniva. Seventeen positive pairs: 1, 2, 3, 11, 20, 31, 41, 42, 60, 72, 73, 75, 76, 77, 85, 86, 89; and twelve indeterminate pairs: 15, 17, 19, 28, 29, 40, 43, 55, 70, 79, 83 and 91. Since the lists for these languages have in common only sixty-two comparable pairs, this gives 17/50, or 34% retention.

Ariti and Baniva. Eleven positive pairs: 1, 3, 20, 39, 55, 60, 72, 73, 75, 76, 77; and fifteen indeterminate pairs: 2, 11, 17, 19, 23, 28, 29, 31, 35, 37, 40, 43, 51, 74 and 85. Since the lists for these languages have in common only sixty-four comparable pairs, this gives 11/49, or 22.45% retention.

Island Carib and Manao. Nineteen positive pairs (twenty if the early Dom. I.C. dialect is used): 1, 2, 3, 11, 12, 25, 27, 28, 37, 39, 41, 42, 43, 45, 46, 52, 55, 60, 71, (89); and ten indeterminate pairs: 6, 7, 38, 40, 44, 48, 51, 58, 73 and 87. As only fifty-seven of the items on the list could be filled in for Manao, this gives 19/47 (and 20/47), or 40.3% retention.

Lokono and Manao. Nineteen positive pairs: 2, 3, 11, 12, 25, 27, 28, 39, 41, 43, 45, 46, 55, 60, 71, 74, 75, 77, 82; and nine indeterminate pairs: 23, 40, 44, 48, 50, 51, 58, 73 and 97. This gives 19/48, or 39.6% retention.

Goajiro and Manao. Sixteen positive pairs: 2, 3, 12, 25, 27, 28, 39, 43, 45, 46, 55, 60, 71, 75, 77, 82; and twelve indeterminate pairs: 7, 11, 38, 40, 41, 44, 48, 50, 52, 73, 74 and 86. Since the lists for these languages have in common only fifty-three comparable pairs, this gives 16/41, or 39% retention.

Piapoko and Manao. Fifteen posititive pairs: 1, 2, 3, 11, 25, 30, 42, 45, 60, 72, 73, 75, 77, 82, 89; and fourteen indeterminate pairs: 6, 7, 12, 17, 43, 44, 45, 48, 51, 54, 61, 71, 86 and 90. Since the lists for these languages have in common only fifty-two comparable pairs, this gives 15/38, or 39.5% retention.

Ariti and Manao. Twelve positive pairs: 1, 3, 12, 41, 44, 46, 55, 60, 72, 73, 75, 77; and seventeen indeterminate pairs: 2, 11, 16, 17, 23, 37, 38, 39, 43, 45, 48, 50, 51, 54, 58, 71, 87. Since the lists for these languages have in common only fifty-six comparable pairs, this gives 12/39, or 30.8% retention.

Baniva and Manao. Eleven positive pairs: 1, 2, 3, 11, 23, 42, 43, 60, 72, 75, 77; and ten indeterminate pairs: 17, 28, 39, 40, 51, 55, 73, 74, 86 and 89. Since the lists for these languages have in common only forty-eight comparable pairs, this gives 11/38, or 28.9% retention.

Island Carib and Baré. Fifteen positive pairs: 1, 2, 3, 17, 25, 28, 31, 42, 44, 46, 48, 55, 60, 76, 83; and thirteen (fourteen if the early Dom. I.C. dialect is used) indeterminate pairs: 11, 12, 15, 16, 35, 37, 39, 40, 41, 43, 61, 73, (89) and 91. As only fifty-six of the items on the list could be filled in for Baré, this gives 15/43 (and 15/42), or 34.9% (and 35.7%) retention.

Lokono and Baré. Thirteen positive pairs: 2, 3, 25, 28, 44, 46, 48, 50, 55, 60, 75, 77, 83; and thirteen indeterminate pairs: 11, 12, 16, 31, 35, 39, 40, 41, 43, 52, 73, 74 and 85. This gives 13/43, or 30.2% retention.

Goajiro and Baré. Thirteen positive

pairs: 2, 3, 25, 28, 44, 46, 48, 50, 55, 60, 75, 77, 89; and fourteen indeterminate pairs: 11, 12, 16, 31, 35, 39, 40, 41, 43, 73, 83, 85, 86 and 100. Since the lists for these languages have in common only fifty-two comparable pairs, this gives 13/38, or 34.2% retention.

Piapoko and Baré. Twenty-two positive pairs: 1, 2, 3, 17, 19, 25, 31, 42, 44, 48, 55, 60, 71, 72, 73, 75, 77, 79, 85, 86, 87, 91; and ten indeterminate pairs: 11, 12, 16, 30, 40, 43, 70, 83, 89 and 90. Since the lists for these languages have in common only fifty-two comparable pairs, this gives 22/42, or 52.4% retention.

Ariti and Baré. Thirteen positive pairs: 1, 3, 19, 39, 44, 46, 48, 55, 60, 72, 73, 75, 77; and thirteen indeterminate pairs: 2, 11, 12, 15, 17, 23, 31, 33, 35, 40, 43, 61 and 85. Since the lists for these languages have in common only fifty-five comparable pairs, this gives: 13/42, or 31% retention.

Baniva and Baré. Eighteen positive pairs: 1, 2, 3, 19, 21, 23, 31, 39, 42, 55, 60, 72, 75, 77, 83, 85, 86, 100; and ten indeterminate pairs: 11, 17, 28, 35, 40, 43, 51, 73, 74 and 89. Since the lists for these languages have in common only forty-nine comparable pairs, this gives 18/39, or 46.5% retention.

Manao and Baré. Seventeen positive pairs: 1, 2, 3, 17, 23, 25, 28, 39, 42, 46, 49, 55, 60, 72, 73, 75, 77; and fourteen indeterminate pairs: 11, 12, 30, 40, 43, 44, 48, 50, 61, 74, 86, 89, 90 and 91. Since the lists for these languages have in common only forty-three comparable pairs, this gives 17/29, or 48.3% retention.

Without more adequate data on the languages concerned, it would, I think, be aleatory to attempt a reduction in the numbers of indeterminate pairs; yet it seems probable that these contain proportionately more cognates in the more distantly related than in the more closely related pairs of languages. On the other hand, the average persistence of items contained in the shorter lists is probably higher than that for the complete list; and therefore, in converting the above figures into minimum centuries of divergence, I have followed a suggestion made by Swadesh, adding 10% to the time in cases offering less than seventy-five comparable pairs, and 20% in those offering only fifty or fewer comparable pairs.

| | Ari. | Ban. | Pia. | Baré | Man. | Goa. | Lok. |
|---|---|---|---|---|---|---|---|
| I.C. | 67 | 65 | 46 | 39 | 33 | 33 | 32 |
| Lok. | 55 | 63 | 45 | 44 | 34 | 22 | |
| Goa. | 44 | 63 | 50 | 40 | 34 | | |
| Man. | 43 | 49 | 34 | 29 | | | |
| Baré | 43 | 30 | 23 | | | | |
| Pia. | 43 | 40 | | | | | |
| Ban. | 55 | | | | | | |

# SENECA MORPHOLOGY V: EXPANDED ASPECT SUFFIXES; ATTRIBUTIVE SUFFIXES*

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**16.** The eventuative and facilitative
**17.** The progressive
**18.** The continuative
**19.** The past
**20.** The attributive suffixes

**16.1.** There are four structurally different expansions of the aspect suffix. The first of these involves the occurrence of the EVENTUATIVE or FACILITATIVE morpheme before the descriptive:

| Verb | | | |
|---|---|---|---|
| Pronominal Prefix | Verb Stem | | |
| | Verb Base | Aspect Suffix | |
| | | Eventuative or Facilitative Morpheme | Descriptive Morpheme |

**16.2.** The eventuative morpheme, -ʹs?-/-ɔ́s?-, indicates that something occurs in the course of events, eventually, finally: ?onénɔs?ɔh *it's finally warm* (-nenɔ- *be warm*), ?akahtɔnís?ɔh *in the course of events it has become lost to me* (-áhtɔ- *lose*, with dative -ni-).

**16.3.** The descriptive allomorph is -ɔ́h following the eventuative. The morpheme preceding the eventuative occurs in its combining allomorph if its most common basic allomorph ends in a consonant other than ?: ?akahsehtás?ɔh *I've finally hidden it* (-ahséht- *hide*). The eventuative allomorph is -ɔ́s?- after morphemes that condition the descriptive allomorph -ɔh: ?okwényɔs?ɔh *it's finally been able to* (-kweny- *be able*).

**16.4.** The facilitative morpheme, -ʹsk-, indicates that something occurs easily, with facility: ?onɔ?nɔwésko:h *it melts easily* (-nɔ?nɔwɛ- *melt*), ?o:nísko:h *it barks at every little thing* (-ʹ[h/:]ni- *bark*). The descriptive allomorph is -ɔh following the facilitative; otherwise its morphophonemics is like that of the eventuative, except that the facilitative itself has only the one allomorph.

**17.1.** The second expanded aspect suffix consists of the descriptive morpheme followed by the PROGRESSIVE morpheme, *-atye-/-tye-*, with this combination in turn followed by one of the four principal aspect morphemes:

| Modal Prefix | Verb | | | | |
|---|---|---|---|---|---|
| | Pronominal Prefix | Verb Stem | | | |
| | | Verb Base | Aspect Suffix | | |
| | | | Progressive Construction | | Aspect Morpheme |
| | | | Descriptive Morpheme | Progressive Morpheme | |

**17.2.** The resultant meaning is one of progression, often translatable as *along* or *all along*: hoetkɛ?ɔ́:tye? *he's getting progressively uglier* (-ʹ[h]etkɛ- *be ugly*, with

* Seneca Morphology I, II, III and IV, IJAL 26.11-22, 123-129, 224-233, 283-289.

inchoative I -'?-), wa?ohtenyó:tye? *it's in the process of changing* (-teny- *change*), kehóktatye? *along next to the river* (-kt- *be next to*, with incorporated noun root -ihɔ- *river*).

**17.3.** The aspect allomorphs which follow the progressive morpheme are: -'? *descriptive* -'?s *iterative*, -'h *imperative*. The descriptive allomorph which precedes the progressive is identical with that occurring in word-final position, except that final h or ? is lacking and the vowel preceding word-final h is basically strong, whether or not it is otherwise: see wa?ohtenyó:tye? above, where the descriptive allomorph is -ó- (word-final -ɔh). Preceding verb roots ending in e occur here without the e: swathɔtatye? *you (pl.) have been listening along* (-athɔ[:]te- *listen*). The progressive allomorph is -atye- after a consonant or basically strong vowel (see examples above), -tye- after a basically weak vowel: hoyɛtatye? *he has it along with him* (-yɛta- *have*, with -O- *descriptive* [word-final -?]).

**18.1.** The third expanded aspect suffix occurs only within a modal verb. It consists of either the descriptive or the iterative morpheme followed by the CONTINUATIVE morpheme, -ak/-ek/-k:

**18.3.** The descriptive allomorph which precedes the continuative morpheme is like that which precedes the progressive (**17.3**), but verb roots in e retain the e. Following the descriptive the continuative allomorph is -ak after a consonant or basically strong vowel, -k after a basically weak vowel: ?ɛyokwenyó:ɔk *it will continue to be possible* (-kweny- *be possible*, with -ó- *descriptive* [word-final -ɔh]), ?ɛwókathɔ:te:k *I'll continue to be listening* (-athɔ[:]te- *listen*, with -O- *descriptive* [word-final -'?]). Some roots whose word-final descriptive allomorph is -'?, -?, or -O occur here in their combining allomorph, are followed by the descriptive allomorph -'?-, and the continuative allomorph is -k: ?ɛka:ta?k *it will always be standing* (-t- *stand*).

**18.4.** The iterative allomorph which precedes the continuative morpheme is the same as in word-final position, except that -'hs- occurs in place of word-final -'s, -h- in place of -há?, -'O- in place of -'h, and -O- in place of -á?. Following the iterative the continuative allomorph is -ek after s, -ak otherwise: ?ɛɔtatyé?se:k *he'll continue to stand around* (-t- *stand*, with the progressive construction preceding the continuative), ?ɛyéthe?tha:k *she'll always pound corn* (-thé?t- *pound corn*, with iterative -h- [word-final -há?]).

| Modal Prefix | Verb | | | |
|---|---|---|---|---|
| | Pronominal Prefix | Verb Stem | | |
| | | Verb Base | Aspect Suffix | |
| | | | Descriptive or Iterative Morpheme | Continuative Morpheme |

**18.2.** The resultant meaning is one of continuation: ?ɛkayasó:ɔk *it will continue to be called* (-yas- *call, name*), ?a:ki:-wayɛtéia:k *I should always know the customs* (-yɛtei- *know*, with incorporated noun root -[C]í:w- *matter, custom*).

**19.1.** The fourth expanded aspect suffix never occurs within a modal verb. It consists of either the descriptive or the iterative

morpheme followed by the PAST morpheme, -k/-ʔ/-ák/-nóʔ/-kwáʔ:

| Verb | | | |
|---|---|---|---|
| Pronominal Prefix | Verb Stem | | |
| | Verb Base | Aspect Suffix | |
| | | Descriptive or Iterative Morpheme | Past Morpheme |

**19.2.** The resultant meaning is one of occurrence in the past: hayáso:noʔ *it was his name, he was called* (cf. haya:soh *he is called*), hanóeʔskwaʔ *he used to like it* (cf. hanóeʔs *he likes it*).

**19.3.** The descriptive or iterative allomorph which precedes the past morpheme is the same as in word-final position, except that final ʔ is lacking, : occurs in place of h in descriptive allomorphs, and -'O occurs in place of the iterative allomorph -'h. The past allomorphs occur as follows: -k occurs after the iterative allomorphs -há- (word-final -háʔ) and -á- (word-final -áʔ), and sometimes, depending on the pre-aspect morpheme, after the descriptive allomorph -'O- (word-final -'ʔ): ʔote:khak *it was burning* (cf. ʔote:khaʔ *it is burning*), ʔakwanɔtayɛtáhkwak *we (excl. pl.) used to use it for establishing a town, used to camp there* (cf. ʔakwanɔtayetáhkwaʔ *we camp there*), hokáʔtek *he had a lot of it* (cf. hokáʔteʔ *he has a lot of it*); -ʔ occurs otherwise after the descriptive allomorph -'O-: ʔakéhse:ʔ *I was riding on its back* (cf. ʔakéhseʔ *I am riding on its back*); -ák occurs after the descriptive allomorph -O- (word-final -O) and the iterative allomorph -'O- (word-final -'n): hokeotak *he was telling a story* (cf. hoka:ot *he is telling a story*), hatɔ́:k *he used to say* (cf. ha:tɔh *he says*); -nóʔ occurs after descriptive allomorphs ending in : (word-final h): hokwé:nɔʔ *he had picked it* (cf. hokwɛh *he has picked it*); -kwáʔ occurs after iterative allomorphs ending in s: yokháskwaʔ *it was dripping* (cf. yokhas *it drips*).

**20.1.** A nonmodal verb (**8.1**) or a noun may be followed by an ATTRIBUTIVE SUFFIX, which modifies its meaning in a more or less adjectival or adverbial fashion:

| Nonmodal Verb or Noun | Attributive Suffix |
|---|---|

The attributive suffixes are described individually in the following paragraphs. Their allomorphs, when there are several, are not systematically predictable. In some, but not all morphemes a word-final h or ʔ is lacking before one of these suffixes.

**20.2.** The AUGMENTATIVE morpheme, -kowah, indicates greatness of size or importance: hatíyosko:wa:h *he's a great fighter* (cf. hati:yos *he fights*), ʔostówæʔko:-wa:h *Great Feather Dance* (cf. ʔosto:wæʔ *headdress*).

**20.3.** The DIMINUTIVE morpheme, -ʔáh/-háh, indicates smallness or approximation: kakɛ:tʔah *it's whitish* (cf. kakɛ:ɛt *it's white*), hotyánɔtʔah *he's kind of funny, cute* (cf. hotya:nɔt *he's funny*), hoyótihah *Smiley* (cf. hoyɔ:tih *he smiles*).

**20.4.** The CHARACTERIZER morpheme, -khaʔ/-kéaʔ/-káʔ/-kaʔ, indicates that something is characterized by the meaning of what precedes: -khaʔ in káɛhtakɔ:khaːʔ *characterized by being in the swamp, the swamp variety* (cf. káɛhtakɔ:h *in the swamp*), -kéaʔ in ʔokeoʔjáʔke:aʔ *green snake* (cf. ʔokéoʔjaʔ *grass*), -káʔ in jo:wéʔstakaʔ[1] *sea gull* (cf. ʔo:wéʔstaʔ *foam*), -kaʔ in ʔonótaʔke:ka:ʔ *the Onondaga*, lit. *characterized by being on the hill* (cf. ʔonótaʔkeh *Onondaga Reservation*, lit. *on the hill*).

**20.5.** The POPULATIVE morpheme, -'(C)onóʔ, indicates reference to someone who lives at or is a member of something: ʔoʔsoækóːonɔʔ *person from Pinewoods* (cf. ʔoʔsóækɔ:h *Pinewoods*, lit. *in the pines*, a

[1] The initial j is from the repetitive morpheme, yet to be described.

settlement on the Cattaraugus Reservation), ʔakatɔní:onɔʔ *member of my father's clan* (cf. ʔakatɔni:h *my father's clan*).

**20.6.** The DECESSIVE morpheme, -kéɔʔ, indicates that something or someone formerly existed, but no longer does: keksaʔá:kɛ:ɔʔ *I was once a small child* (cf. keksáʔa:h *I am a small child*), haksótkɛ:ɔʔ *my deceased grandfather* (cf. hakso:t *my grandfather*). It may also occur after another attributive suffix: haksotkowákɛ:ɔʔ *my deceased great grandfather* (cf. haksótko:wa:h *my great grandfather*, with the augmentative [**20.2**]).

**20.7.** The PLURALIZER morpheme, -shóʔ/-shóʔɔh, indicates pluralization: keʔnyáʔshɔʔ *my fingers* (cf. keʔnyaʔ *my finger*), ʔoyɔwɔʔshóʔɔh *tall weeds* (cf. ʔoyɔ:wɔʔ *tall weed*), howéshɔʔɔh *his belongings* (cf. ho:weh *it belongs to him*).

# MAIDU AND NISENAN: A BINARY SURVEY

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**0.** Introduction
**1.** Common correspondences
**2.** Disyllabic harmonic bases
**3.** Reductions in Nisenan
**4.** Reductions in Maidu
**5.** Labial-glottal correspondences
**6.** Residua
**7.** Gloss list

**0.** The Maidun languages were spoken in a roughly rectangular area of Northern California, with corners at Mount Lassen, Honey Lake, Kit Carson Pass and the confluence of the Sacramento and American Rivers—a territory some 150 by 75 miles in area. Most of the country is in the Sierra Nevada and its foothills, though the western part lies in the flat lowlands of the Sacramento Valley.

The evidence presently at hand indicates that there were at least four languages of the Maidun group, i.e., four discernible speech communities with little mutual intelligibility among them. They were as follows:

MAIDU (Mountain Maidu, Northeastern Maidu) was spoken in the various high mountain meadows which lie east and south of Lassen Peak as far as the present town of Quincy. This language had little or no dialectal differentiation. The name means *person.*

CHICO was a language for which no traditional name exists. It was spoken in the Sacramento Valley around the town of Chico and for some miles to the south. There were probably two groups of dialects; the first, or northern group included the villages of Michúpda, Yúdawi and Otakímme; the second, or southern group included the villages of Eskéni and Némsu.

KONKOW (Northwestern Maidu) was spoken in a number of dialects along the lower reaches of the Feather River Canyon, in the surrounding hills, and in the adjacent parts of the Sacramento Valley. The name is from kójom ƙáwi *valley land.*

NISENAN (southern Maidu) was spoken in several dialects through the entire southern half of the Maidun area. The name is from nisena·n *from* (*among*) *us*, the Indians' own name for themselves.

Until more data are collected, it will not be possible to do more than make tentative statements of the interrelationships among these languages. Lexically, Maidu and Chico seem to have the largest number of common items, with Konkow standing between these languages and Nisenan. In terms of grammatical structure, Maidu is clearly aberrant, with Chico, Konkow and Nisenan forming a continuum of types. Nisenan and some dialects of Konkow have a seventh vowel phoneme /ə/ not found in the north. All of the languages except Maidu have phonemic vowel length; the cognate Maidu forms usually (but not always) show phonemic stress.

It is fortunate that Maidu and Nisenan, the two Maidun languages for which there are adequate descriptive data, are also the most dissimilar.[1] The present paper will

[1] The data for the present paper are from two sources: H. J. Uldall's material on the Auburn dialect of Nisenan, collected about thirty years ago, and my own material for Maidu, collected in recent years under the auspices of the Survey of California Indian Languages, Department of Linguistics, University of California, Berkeley. The bulk of both these collections remains unpublished. After Professor Uldall's death in 1957, his wife generously donated his notes to the Department of Linguistics, University of California, Berkeley, where they are now being edited and prepared for publication.

I have re-orthographized Uldall's data to con-

examine the phonological and lexical correspondences for these two languages. It is not my purpose here to set down all the available etymologies, but to characterize the salient features of the binary relationship, providing specific forms only as examples in the discussion. Although there is reason to assume that the majority of reconstructed forms deriving from a Maidu-Nisenan comparison will eventually prove identical to the forms for Proto-Maidun, any present list would be not only incomplete but also rife with interim reconstructions. I have included all unusual or unique correspondences for which there is evidence at this time, thus making the scope of the discussion as broad as possible.

As a preliminary, a general impression of the contrast in syntax between Maidu and Nisenan may be given by means of the following three pairs of sentences:[2]

Maidu: *ʔaćét*[1], *mydí*[2] *májsem*[3] ʔas[4] mym[5] *májdy*[6] *mýćòj*ʔam[7-8-7] *nòkóni*[9]. Nisenan: *haće*[1], *myjna*[2] hedem[5] *majdyk*[6] *mysem*[3] ʔolaw*ni*[9] wakkatom*atoj*[7-8]. English: Thereupon[1], they[3] shot[7] that[5] person[6] there[2] with-an-arrow[9] it-is-said[8].

Maidu: ʔadóm[1], jewéjdom[2], *myki*[3] *té*[4] masý[5] *myki*[6] *mypó*[7] *wéjećòj*ʔam[8-9-8]. Nisenan: han[1], *k*əlakojin[2], *wejda·ṫomatoj*[8-9] *myte·*[4] *myse*[3] han[5] *mypo·*[7] *myse*[6]. English: Then[1], returning[2], he-spoke-to[8] his[3] son[4] and[5] his[6] daughter[7] it-is-said[9].

Maidu: mýdem[1] ʔas[2] sýttim[3] kylém[4] *p*ýbe[5] *méćój*ʔam[6-7-6]. Nisenan: kapám[1] *me·ṫomatoj*[6-7] witte·m[3] kono*beje*[4-5]. English: A-bear[1] took[6] a[3] little-girl[4-5] it-is-said[7].

It is clear from the sequences of items given above that Maidu and Nisenan are quite dissimilar in terms of syntactic order. As far as lexical cognates are concerned, an examination of a short Nisenan text reveals the following percentages, calculated separately for roots and for suffixes:

| | Roots | | Suffixes | |
|---|---|---|---|---|
| | Number | Percent | Number | Percent |
| Forms not cognate with Maidu | 47 | 36 | 13 | 18 |
| Probably cognate but with problems | 35 | 27 | 44 | 59 |
| Identical or "regular" cognates | 48 | 37 | 17 | 23 |
| Total cognates | 83 | 64 | 61 | 82 |

**1.** On the basis of one-to-one correspondences, the following consonants may be reconstructed for Maidu-Nisenan. Examples from the gloss list are given after each consonant:

*b *blow, bone, hair, light, pity, throw*

*d *bite, blood, bow, breakfast, distant, dream, like, near, sweet, tie, where, yonder*

*p *done, lightning, sweat, three*

*ṫ *buttercup, creature, leak*

*ć *breakfast, clothing, four, hail, join, lizard, meet, side, while*

*k *creature, done, dry, go away, light, lizard, roll*

*ʔ *come hither, coyote, get up, gnaw, go, go away, head, strong*

*p *above, almost, armpit, bow, come hither, defecate, done, fish, grape, night, skin, swim, two, untie, vagina*

*t *almost, younger brother, bury, but, child, crazy*

*k *all, bow, dark, gray, hail, kill, snow*

*s *angry, blood, buckskin, cover, fire, gnaw, stay, sweet, thing, three, vagina*

*h *carry, coals, crazy, distant, game, gopher, grouse, house, near, squirrel, where, who, yawn, yes, yonder*

form to the common contemporary usage among those scholars who are working on California Indian Languages. No other alterations or interpretations have been made of his material.

Phonological statements have been published for both Maidu and Auburn Nisenan. For Maidu, see William Shipley, The Phonemes of Northeastern Maidu, IJAL 22: 233–237 (1956). For Nisenan, see H. J. Uldall, Maidu Phonetics, IJAL 20: 8–16 (1954).

[2] The superscript numbers mark the salient syntactic units, with Maidu as a point of reference. Italics are used for those morphemic elements which are cognate between the two languages.

*m *arm, bone, cheek, coals, drink, gopher, grape, make, person, pity, where, who*

*n *above, all, armpit, around, bow, younger brother, come hither, die, digger pine, dream, go, head, kill, light, lose, old, two*

*w *buckskin, but, call out, Caucasian, cover, die, gray, hop, kill, lightning*

*j *arm, do, feather, four, go away, quotative suffix, shade, west*

*l *boil, buckskin, Caucasian, coyote, dark, dry, fish, game, goose, hail, leak, leg, lightning, squirrel, sweat*

This roster of consonants is the same as that found in Nisenan; in Maidu, /c/ occurs in a few forms. Nisenan /b/, /d/, /ḍ/ and /h/ are never syllable-final. In Maidu, /b/, /d/, and the entire series of glottalized stops never occur syllable-finally, though /h/ is sometimes in that position. The absence of syllable-final glottalized stops in Maidu derives from a neutralization of the glottal component. A morphophonemic distinction is maintained wherever the phonemic arrangements result in resyllabification, e.g., with {banák} *light*:

‖ banák V ‖: /banák V/, as in banáka *light* (object case)

‖ banák C ‖: /banák C/, as in banákpe *light* (attributive)

This development has not occurred in Nisenan. In that language, glottalized stops remain everywhere phonemically distinct, a situation paralleled in the reconstructed forms for Maidu-Nisenan.

The common vowel correspondences are slightly more complex. An overlapping of phonemic length in Nisenan with phonemic stress in Maidu provides a tentative inclusion of both factors in the reconstructed form:

*V́· > Maidu V́; Nisenan V·, e.g., *dó· *bite* > Maidu dó; Nisenan do·

*V́ > Maidu V́; Nisenan V, e.g., *sá *fire* > Maidu sá; Nisenan sa

*V· > Maidu V; Nisenan V·, e.g., *ċi·ċí *rib* > Maidu ċiċí; Nisenan ċi·ċi

*V > Maidu V; Nisenan V, e.g., *pándak *bow* > Maidu pándak; Nisenan pandak

In terms of the above pattern, the common vowel correspondences are:

*i *y *u

*e *o

*a

with one-to-one reflexes in both languages, identical to the reconstructed forms.

There is a seventh vowel phoneme /ə/ in Nisenan. It is of relatively rare occurrence in that language, and is found in only five binary sets in the present material. In these sets, all of which are unreconstructible, /ə/ appears as a possible reflex for all other vowels in Maidu except /i/ and /a/. The sets are: *cheek, gnaw, hop, knee, squirrel.* No adequate evidence for the provenience of /ə/ has as yet been found.

**2.** There are a number of morphemes in Maidu with the shape CV, and with primary stress on the next following syllable, whatever that may be. For example, ċudóm *melting* contains two morphemes: ċu *' melt* and -dom *-ing*. The primary stress is an integral part of the first morpheme. Such morphemes are said to have delayed stress, symbolized as ċu.*' melt*.

Delayed stress does not occur in Nisenan, which has, instead, three grades of reflexes for the delayed-stress morphemes of Maidu. Reconstructions for all grades may be based on the postulation of an original disyllable with harmonic vowels and with intervocalic h or ʔ, perhaps freely varying, here symbolized as *ħ. The stress of the reconstructed form is invariably on the second syllable.

Maidu monosyllables with delayed stress are presumed to have lost the segmental material of the second syllable, but to have retained the stress, which now occurs on the first syllable of any following morph.

The three grades of reflex in Nisenan represent three corresponding grades in the reconstructed forms. There has been a loss, in Nisenan, in most cases, of all short, unstressed vowels and of any *ħ originally contiguous to a short, unstressed vowel.

For the reconstructed forms, the three grades may be described as follows:

Short-short grade has the shape *CV$_1$ħV́$_1$; e.g., *poħó *skin* > Maidu po.!; Nisenan po. Here, Nisenan has presumably lost the unstressed *o and the *ħ. Stress is no longer phonemic in Nisenan. The other sets for this grade are: *do*, *say*, *see* and *swim*.

Short-long grade has the shape *CV$_1$ħV́·$_1$; e.g., *woħó· *call out* > Maidu wo.!; Nisenan wo·, with the loss, in Nisenan, of the unstressed *o and the *ħ as in the short-short grade. It is probable that the Nisenan forms for this grade were disyllabic until very recently. A doublet exists in Nisenan as the reflex for *neħé· *old*, viz., ne· ~ nehe. The disyllabic reflex in Nisenan for the long-short grade, described below, reinforces this hypothesis. The other sets for short-long grade are: *be*, *make*, *melt*, *tell to*.

Long-short grade has the shape *CV·$_1$ħV́$_1$; e.g., *mo·ħó *drink* > Maidu mo.!; Nisenan mo·ho. Here there are no short unstressed vowels; the whole disyllable is retained in Nisenan. A doublet exists in Nisenan as the reflex for *bo·ħó *throw*, viz., bo·ʔo ~ boʔo. This latter variant is identical to the older short-long grade reflex for Nisenan which has been proposed above. The other set for long-short grade is *lamp*.

There are various special statements which must be made in connection with the disyllabic harmonic bases.

In at least one instance, a reconstructed form with stress on the first syllable may be postulated: *pó·ho *night* > Maidu pó; Nisenan po· ~ po·ho. This is probably best taken as a long-short grade, with the Nisenan variant po· as the expected reflex, showing the loss of the short unstressed *o and the contiguous *ħ. The other variant, po·ho, may persist by analogy with long-short grades which are stressed on the second syllable. The absence of delayed stress in the Maidu form may be seen as a result of the placement of stress in the reconstruction. It is to be noted that other examples of Maidu CV́; Nisenan CV· may also represent an earlier disyllabic form. If so, the evidence is lost, and only *CV́· may now be reconstructed.

Three Maidu morphemes derived from the short-long grade resemble other morphemes in Maidu, similar in meaning, but with a form identical to that proposed for the short-short grade of the reconstructed form. The pairs of forms are: wo.! *call out* woʔó, *howl*; ka.! *be*, kaʔá *do*; ma.! *make*, maʔá *perform*. These may be taken as the closest possible approximation to the short-long grade in Maidu (which has no phonemically long vowels). Identity with the short-short grade is taken to be fortuitous.

Two etymologies pointing to a disyllabic harmonic prototype are puzzlingly anomalous. The first is *kaħá· or *ƙaħá·, here glossed as *be* > Maidu ka.!; Nisenan ƙa· *do*. Not only is there a shift in gloss, but Maidu k; Nisenan ƙ is a rare correspondence. No other short-long grades have initial voiceless stop. Perhaps the Nisenan form represents some such sequence as *kaħá· > *kħá· > *kʔa· > ƙa·. The Maidu form kaʔá *do*, discussed in the preceding paragraph, supports this hypothesis. Further, Nisenan has no verb meaning *be*.

The second etymology is *ćehé *see* > Maidu će.!; Nisenan ʔe. A uniquely occurring correspondence of Maidu ć with Nisenan ʔ is unsatisfactory. The only feasible postulation seems to be that *(će)ħé > *ħe > ʔe.

**3.** There are fifteen sets of forms which demonstrate some segmental reduction in Nisenan. Of these, eleven sets fall into one of two recurring patterns. Each of the remaining four sets presents a unique problem.

The most frequent reduction pattern in Nisenan is the loss of a final alveolar consonant, e.g., Maidu ʔolél *coyote*; Nisenan ʔole. In all such cases, the reconstructed form is taken as being identical to Maidu. An exception is Maidu dól *tie*; Nisenan du, where the change in vowel cannot be accounted for. The other sets in this group

are: *but, cover, near, where, while . . . ing*, and possibly *who*.

There are three sets which show reduction of a harmonic vowel in the Nisenan forms, following a syllable with a reconstructed long stressed vowel, e.g., Maidu péne *two*; Nisenan pe·n < *pé·ne. The other sets are *leg* (with gloss shifting) and *kill*.

The four sets with unique problems are: *around, digger pine, hail* and *pity*.

**4.** Only one straightforward and recurrent pattern of reduction occurs in the Maidu forms. This involves loss of a final /j/, e.g., *sedéj *blood* > Maidu sedé; Nisenan sedej. The other sets in this group are: *game, gopher* and *three*.

Each of the other etymologies with reduction in Maidu is unique and (except for *lightning* and *person*) presents other problems of correspondence. These sets are: *bury, buttercup, dark, hair, lightning, person, quotative suffix, roll, sweat* and *untie*.

**5.** Five sets are found with an initial labial consonant in Maidu corresponding to glottal stop in Nisenan, e.g., Maidu bís *stay*; Nisenan ?is. Included with these are two examples of Maidu initial wa- corresponding to Nisenan initial ?o-, in *angry* and *thing*. The other sets are *dry* and *luminary*. No reconstruction is proposed for these examples.

**6.** In addition to the various correspondences discussed above, there are a considerable number of sets which are probably or certainly cognate, but with various special difficulties which preclude reconstruction. Those with two or more examples of the correspondence are:

Maidu i; Nisenan e: *dry, grape*.

Maidu k; Nisenan k(k): *hop in a certain manner, knee, luminary*.

Maidu l; Nisenan n: *grape, roll*.

Maidu w; Nisenan b: *hit, lose, put something down*.

The remaining sets, each representing a unique problem, are: *boil, cheek, Chinese, defecate, distant, dove, fish, go, go away, goose, shade, squirrel, swim, yawn* and *yonder*.

**7.** The following list of glosses contains the details for all examples mentioned in the preceding sections. A reconstructed form is set up only when every segment can be accounted for.[3]

ABOVE M ?epín; N hipin
ALL RF *kán M kán; N kan-(no)
ALMOST RF *-pytó M -pytó; N -pyto
ANGRY M wás; N ?os
ARM RF *jím M jím; N jim
ARMPIT RF *pýn M pýn-(no); N ppn *wound*
AROUND M nojé; N ne?
BE M ka.!; N ka·
BITE RF*dó· M dó; N do·
BLOOD RF *sedéj M sedé; N sedej
BLOW RF *bý· M bý; N by·
BOIL M pólpòl; N molmol
BONE RF *bým M bým; N bym
BOW RF *pándak M pándak; N pandak
BREAKFAST RF *ċedá· M ċedá; N ċeda·
BROTHER, YOUNGER M týn; N tyne, ty (vocative)
BUCKSKIN RF *wolós M wolós; N wolos
BURY M tám; N tale
BUT RF *ƀawéten M ?awéten *thereupon*; N hawete
BUTTERCUP M ɬamá; N ɬapan
CALL OUT RF *woƀó· M wo.!; N wo·
CARRY RF *há· M há; N ha·
CAUCASIAN RF *wó·le M wóle; N wo·le
CHEEK M mùsú; N məsəw *chin*
CHILD RF *té· M té; N te· *son*
CHINESE M sájne; N ċajni
CLOTHING RF *čí· M čí; N či·
COALS RF *hé·m M hém; N he·m
COME HITHER RF *?ypín M ?ypín; N ?ypin
COVER RF *wusút M wusút; N wusú
COYOTE RF *?olél M ?olél; N ?ole
CRAZY RF *hútu M hútu; N hutu

[3] The following abbreviations are used in the gloss list: RF—reconstructed form, M—Maidu. N—Nisenan.

CREATURE RF *ƙút M ƙúṫ; N ƙuṫ *deer*
DARK M kulú; N kylym *black*
DEFECATE M pít; N piċi
DIE RF *wó·no M wóno; N wo·no
DIGGER PINE M towán; N to·n *pine nut*
DISTANT M hadá; N hodo
DO RF *jaɦá M ja.!; N já
DONE, RIPE RF *ƙáp M ƙáṗ; N ƙaṗ
DOVE M ʔél?ès púјka; N púlba
DREAM RF *nedí· M nedí; N nedi·
DRINK RF *mo·ɦó M mo.!; N mo·ho
DRY M ṗikál; N ʔeƙal
FEATHER RF *jé· M jé; N je·
FIRE RF *sá M sá; N sa
FISH M palík *shiner*; N pala, ṗyly *fish with hook*
FOUR RF *ċýj M ċýj; N ċyj
GAME RF *heláj M helá; N helaj
GET UP RF ʔotó· M ʔotó; N ʔoto· *morning*
GNAW M ʔéskoċo; N ʔəskət
GO M ʔynó; N ʔuno
GO AWAY M ʔyƙój; N ʔuƙoj
GOOSE M lýlyk; N la·lak
GOPHER RF *heméj M hemé; N hemej
GRAPE M pímmil; N pi·men
GRAY RF *ków M ków; N kow *white*
GROUSE RF *hýƙ M hýk-(wo); N hyƙ
HAIL RF *kó·ƙċyly? M kóƙċylỳly; N ko·ċyly
HAIR M bu.!; N bun' *pubic hair*
HEAD RF *ʔonó M ʔonó; N ʔono *hair*
HIT WITH INSTRUMENT M wó; N bo·
HOP IN A CERTAIN MANNER M wýsƙytƙyt; N wəskət
HOUSE RF *hý M (ƙúm)-hý *sweathouse*; N hy
JOIN RF *-ċiƙ M -ċik; N -ċiƙ
KILL RF *wó·noti M wónoti; N wo·nti
KNEE M poƙós; N ṗakkəs *elbow*
LAMP RF *to·ɦó M to.!; N to·ho
LEAK, DRIP RF *láṫ M lát; N laṫ
LEG RF *lu·lú M lulú *stem, tube*; N lu·l
LIGHT, BRIGHT RF *banáƙ M banák; N banaƙ
LIGHTNING RF *wisṗíl M wiṗíl; N wisṗil
LIKE RF *da·ƙ M (ƙúj)-dak; N da·ƙ
LIZARD M pítċaƙà; N ṗitċaƙa
LOSE M wonó; N bono ~ bo·no *get lost*
LUMINARY M pók; N ʔok, (po·m)-bok *moon, month*
MAKE RF *maɦá· M ma.!; N ma·
MELT RF *ċuɦú· M ċu.!; N ċu·-(no) *disappear*
NEAR RF *hedén M hedén; N hedé *this*
NIGHT RF *pó·ho M pó; N po· ~ po·ho
OLD RF *neɦé· M ne.!-(no); N ne·
PERSON RF *májdyk M májdy; N majdyk
PITY M bomýmyk; N bo·my·
PUT SOMETHING DOWN M wokít; N bokít *alight*
QUOTATIVE SUFFIX M -ċòj-; N -atoj
ROLL M ƙylý; N ƙynynyn
SAY RF *ɦaɦá M ʔa.!; N há
SEE RF *ċeɦé? M ċe.!; N ʔe
SHADE M jamáj; N jubuj
SIDE OF BODY RF *ċi·ċí M ċiċí; N ċi·ċi
SKIN RF *poɦó M po.!; N po
SNOW RF *kó· M kó; N ko· *frost*
SQUIRREL, GROUND M hiló; N hiləw
STAY M bís; N ʔis
STRONG RF *ʔépti M ʔépti; N ʔetti
SWEAT M lýp-(kit); N helop
SWEET M sudák; N sudaƙ
SWIM M py.! ~ pi.! ~ pe.!; N pi
THING M wasása; N ʔose
THREE RF *sáṗyj M sáṗy; N saṗyj
THROW RF *bo·ɦó M bo.!; N boʔo ~ bo·ʔo
TIE M dól; N du·
TWO RF *pé·ne M péne; N pe·n
UNTIE M pýn; N wipyl
VAGINA RF *pýs M pýs; N -pys *mouth of hole*
WEST M táj; N ta·waj ~ ta·j
WHERE RF *homón M homón; N homo
WHILE ... ING RF *-ċet M -ċet; N -ċe
WHO RF *homóni M homóni; N homo-(ky·m)
YAWN M hájujum; N ha·w
YES RF *heʔé· M heʔé; N he·
YONDER M hadá; N hodo

# ABSTRACTS AND TRANSLATIONS

## A Glottochronological Study on Three Okinawan Dialects

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**1.** In an article entitled "On the method of glottochronology and the time-depth of proto-Japanese"[1] I undertook a glottochronological comparison of the dialects of Tokyo, Kyoto, and Shuri, referring to the period of the proto-Japanese language, but it seems that there has arisen some apprehension concerning the results of that study due to the fact that only one Ryukyu dialect, that of Shuri, was considered. In actuality, I had also conducted a parallel investigation using the Yamatobama dialect of Amami Ōshima (as spoken by Sumako Nagata), as well as with Dr. Masamori Miyanaga's Yaeyama Vocabularies, and had satisfied myself that relatively comparable numerical values were obtained; this latter research was not included in the article however, because there remained several unresolved problems of detail.

In the present paper I will undertake a comparison of the previously used dialects (Tokyo, Kyoto, and Shuri) with an additional pair of Okinawa dialects for which I have now obtained satisfactory data. The first of these is the Yonamine dialect of the Nakajin township, Kunigami district, Okinawa Island, as spoken by Professor Masayoshi Nakasone of the Ryukyu University. It was nearly 30 years ago, when we were both students at Tokyo University, that I first heard a Ryukyu dialect spoken, by Nakasone himself; thereafter we worked out together the phonetics of his dialect. When Professor Nakasone revisited Tokyo last March, we were able to renew an acquaintance which had lapsed for some 17 years, and to complete the better part of the phonemicization which is employed in this paper. Since generally speaking the Yonamine dialect retains certain archaic features, such as an initial p, our curiosity was aroused as to what glottochronological results might be forthcoming.

The second dialect introduced herein is that of Naha; my informant, Mr. Morioshi Sotoma, is considerably younger than Professor Nakasone and myself, having been born in 1923. He is a resident and native of the Shimo-izumi quarter (formerly Izumisaki) of Naha city; he graduated from the Okinawa Teacher's School and subsequently from the Kokugakuin University, and is now a research fellow in the Linguistics Department of the School of Letters, Tokyo University. It is Mr. Sotoma's opinion that the Naha dialect is being influenced extensively by the Standard Japanese language, and is thus gradually losing its status as a dialect. In comparing the Naha dialect with that of Mr. Shunchō Higa of Shuri it becomes evident to what extent Sotoma's speech is 'Japan-ized'; this fact may be of some interest in another context.

Finally, I have conducted my study of these dialects in a somewhat painstaking manner, in the hope that it might thereby contribute to the critical examination of the glottochronological method itself. The main body of the paper consists of the data from the five dialects.

**2.** Unfortunately space does not allow more than the following summary explanation of my phonemic transcriptions.

**2.1.** The Tokyo and Kyota dialects: /N/ is the syllabic nasal. /Q/ represents a sound assimilated to the following consonant. /ci/ is [či], /cu/ is [cu], and /cja/ is [ča]; /'/

[1] Gengo Kenkyū, Journal of the Linguistic Society of Japan Nos. 26/27.

is a voiced sound contrasting with /h/, so that /'a/, /'i/, ... /'ja/ ... /'wa/, etc., may be taken to represent respectively [a], [i], ... [ja] ... [wa].

/'/ indicates accent, e.g. /'waru'i/ [waru:i]. Unmarked forms in the Tokyo dialect are level in accent. At the beginning of forms, /'/ and /`/ are employed for the Kyoto dialect to indicate the phonemic distinction, for the portion preceding the accent nucleus (marked /'/), between, respectively, high and low pitch. [I.e., /'/ indicates high pitch only initially, accent only non-initially.]

**2.2.** For a detailed explanation of the phonemic system of the Shuri dialect, the reader is referred to Sekai Gengo Gaisetsu, Vol. II, pp. 318ff.[2] The notation of accent has, however, been revised for this paper as follows: level accent is unmarked, and falling accent is indicated by a marked accent nucleus on the initial mora.

**2.3.** The phonemic system of the Naha dialect is quite similar to that of the Shuri dialect in all respects except accentuation. I have decided to adopt a morphophonemic accent notation for the Naha material, in order to facilitate comparison with the other dialects. The following example illustrates the phenomenon which makes this procedure desirable: when /nu/, the subject-marking particle, is suffixed to forms which have identical accentual contours in isolation, the resulting forms may differ accentually in a number of instances. The differences between a strictly phonemic transcription and the transcription employed in this paper can be summarized as follows for forms of various phonological types (using the symbol O to represent a mora):

[Editor's note; column A indicates the phonemic representation of a phonological type of form in isolation. Column B indicates the phonemic representation of the type before /nu/; it shows whether forms belonging to the type fall into one or into two classes in this context. Column C indicates this paper's morphophonemic representation of forms belonging to each type, according to the classes shown in column B.]

| | A | B | C |
|---|---|---|---|
| Type 1 | OO | 'OOnu | 'OO |
| | | `OOnu | `OO |
| Type 2 | O'O | O'O | O'O |
| Type 3 | 'OOO | 'OOOnu | 'OOO |
| Type 4 | `OOO | `OOOnu | `OOO |
| | | OO'Onu | OO'O |
| Type 5 | 'OOOO | 'OOOOnu | 'OOOO |
| Type 6 | `OOOO | `OOOOnu | `OOOO |
| | | OOO'Onu | OOO'O |
| Type 7 | OO'OO | OO'OOnu | OO'OO |
| Type 8 | 'OOOOO | 'OOOOOnu | 'OOOOO |
| | | 'OOOO'Onu | 'OOOO'O |
| Type 9 | `OOOOO | `OOOOOnu | `OOOOO |
| | | `OOOO'Onu | `OOOO'O |
| Type 10 | OOO'OO | OOO'OOnu | OOO'OO |
| Type 11 | OO'OOO | OO'OOOnu | OO'OOO |

The following examples indicate the relationship between the phonemic and phonetic transcriptions of the Naha material:

/kii/ ['ki:] *hair* /'kiinu/ ['ki:nu]
/kii/ ['ki:] *tree, wood* /`kiinu/ ['ki:'nu]
/hu'ni/ ['hu`ni] *boat* /hu'ninu/ ['hu`ninu]
/'kaara/ ['ka:ra] *river* /'kaaranu/ ['ka:ranu]
/`kuruu/ ['ku'ru:] *black* /`kuruunu/ ['kuru:'nu]
/`tamagu/ ['tama'gu] *egg* /tama'gunu/ ['ta'ma`gunu]
/'tiɴbusu/ ['timbusu] *knee* /'tiɴbusunu/ ['timbusunu]
/`ciiruu/ ['tsi:'ru:] *yellow color* /`ciiruunu/ ['tsi:ru:'nu]
/`kukunuci/ ['kuku'nutsi] *nine* /kukunu'cinu/ ['kuku'nu`tsinu]
/ʔanu'ɋcu/ ['ʔanu`ttsu] *he* /ʔanu'ɋcunu/ ['ʔanu`ttsunu]

It should also be noted that those forms transcribed without the accent nucleus behave, when followed by other forms in context, as though a nucleus were present on the final mora, i.e., a high accent onset /'/

[2] Sekai Gengo Gaisetsu. An Introduction to the Languages of the World. Vol. II, Tokyo, 1955.

is lowered following the sequence without nucleus. Examples of this phenomenon:

/kii'narabiiN/ *aligns hairs, aligns wood* ['ki:ˆnarabi:N]

/kii'nageesuN/ *makes hairs flow, makes wood flow* ['ki:'nage:'suN]

/'kiinu''jakiiN/ *hair burns* ['ki:nuˆjaki:N]

/'kiinu''jakiiN/ *wood burns* ['ki:'nuˆjaki:N]

/'kiinu'nagariiN/ *hair flows* ['ki:nu'nagari:'N]

/'kiinu'nagariiN/ *wood flows* ['ki:'nu'nagari:'N]

The phonemic transcription of the Yonamine accentuation is compared with the phonetic transcription in the following examples:

/'panaa/ *nose* ['p'a'na:]

/'panaa/ *flower* ['p'ana':]

This high-low contrast is lost when /'hunu/ *this* is prefixed:

/'hunupanaa/ *this nose, this flower* ['hunup'ana:]

In the examples provided below, it may be considered that the accent nucleus shifts, following the prefix /'hunu/, and so, despite the fact that in the Yonamine dialect short vowels of the second and subsequent syllables cannot bear an accent nucleus, it has been decided to indicate the latent position of the accent in phonemic transcription:

/'haa'ra/ *river* ['ha:'ra] ['hunuha:'ra]

/'haa'ra/ *tile* ['ha:'ra] ['hunuha:'ra]

/'manaa'ca/ *chopping board* ['ma'na:'t'ʒa] ['hunumana:'t'ʒa]

/'siraa'mi/ *louse* ['sira:'mi] ['hunusira:'mi]

Forms transcribed without an accent nucleus behave as though one were present on the final mora, just as in the Naha dialect; Yonamine examples:

/'kii'daasu'N/ *soaks hair* ['k'i:ˆda:su'N]

/'kii'nagaasu'N/ *makes hair flow* ['k'i:'naga:'su'N]

/'kii'daasu'N/ *soaks wood* ['k'i':ˆda:su'N]

/'kii'nagaasu'N/ *makes wood flow* ['k'i':'naga:'su'N]

/'kii'nu'diiru'N/ *hair is wet* ['k'i:'nu'di:ru'N]

/'kii'nu'diiru'N/ *wood is wet* ['k'i:'nuˆdi:ru'N]

**3.** As the symbols used in the present paper to indicate the relationship between forms in two dialects include several not previously introduced, the following brief explanation is offered:

+ indicates perfect correspondence between the two forms compared. This symbol is also extended to items which have been subjected to analogical modification. With regard to 'verbs' and 'adjectives', however, only roots are taken into consideration.

÷ indicates that differences are due to an affix or other modifying element in one of the forms compared, or are due to morphophonemic change. (These cases are rated + by Swadesh and others.)

− indicates that the two forms compared are etymologically different.

× indicates that + or ÷ might be appropriate except for the fact that the form in one or both dialects compared is a borrowing from the Standard Japanese.

= indicates that − or ○ might be appropriate, but with the same reservation as in the preceding paragraph: the form in one of the dialects is a borrowing from the Standard Japanese.

○ indicates that an etymology is obscure, and a definite + or − cannot be assigned. This symbol is also used when forms are composed of several inter-modifying elements and it is impossible to choose the primary one.

( ) indicates loan words from Chinese which, though rated + or ÷, cannot be derived from proto-Japanese.

—— indicates that there is no appropriate form in the dialect for that test list item. A blank space indicates that the appropriate form was not obtained.

**3.1.** Several of the items from the Shuri dialect previously published were found

upon subsequent investigation to require correction.

45. *Feather* /tuinukii/ is the plumage of the bird's entire body, while /ha'nigũi/ is a feather plucked from the wing or attached to an arrow. The latter is adopted.

155. *Straight* /ma'ɢtooba/ is to be preferred.

24a. *To cry* na'cuɴ/ is a better choice.

25a. *To dance* /ʔu'dujuɴ/ means *to dance* (a dance of established pattern), while /mo'ojuɴ/ refers to improvised dancing entertainment at feasts and the like. The latter is adopted.

Misprints in the previous publication have been corrected.

4. [Translator's note: Professor Hattori's columnar table form of data presentation is in many respects an ideal one, but in the interests of economy in publication the form used by Hoijer (1956) is adopted here, though it is less efficient for this limited number of dialects.]

(1) all (of a number), (2) and, (3) animal, (3a) arm, (4) ashes, (5) at, (6) back (of a person), (7) bad (deleterious, unsuitable), (8) bark (of tree), (9) because, (10) belly, (11a) berry [see: fruit], (11) big, (12) bird, (13) to bite, (14) black, (15) blood, (16) to blow (of wind), (17) bone, (17a) breast, (18) to breathe, (18a) brother, (19) to burn (intrans.), (20) child (young person rather than as relationship term), (20a) claw, (20b) clothing, (21) cloud, (22) cold (of weather), (23) to come, (23a) to cook, (24) to count, (24a) to cry, (25) to cut, (25a) to dance, (25b) dark, (26) day (opposite of night), (27) to die, (28) to dig, (29) dirty, (30) dog, (30a) down, (31) to drink, (32) dry (substance), (33) dull (knife), (34) dust, (35) ear, (36) earth (soil), (37) to eat, (38) egg, (38a) eight, (39) eye, (40) to fall (drop rather than topple), (41) far, (42) fat (organic substance; grease), (43) father (44) to fear, (45) feather (large feather rather than down), (46) few, (47) to fight (48) fire, (49) fish, (50) five, (51) to float, (52) to flow, (53) flower, (54) to fly, (55) fog, (56) foot, (57) four, (58) to freeze, (59) fruit (or berry), (59a) full, (59b) fur, (60) to give, (61) good, (62) grass, (63) green, (64) guts, (65) hair, (66) hand, (67) he, (68) head, (69) to hear, (70) heart, (71) heavy, (72) here, (73) to hit (with fist), (74) to hold (in hand), (74a) horn, (74b) hot, (75) how (75a) hundred, (76) to hunt (game), (77) husband, (78) I, (79) ice, (80) if, (81) in, (82) to kill, (82a) knee, (83) to know (facts), (84) lake, (85) to laugh, (86) leaf, (87) left (hand), (88) leg, (89) to lie (on side), (90) to live (alive), (91) liver, (92) long, (93) louse, (94) man (male human), (95) many, (96) meat (flesh), (96a) milk, (96b) moon, (97) mother, (98) mountain, (99) mouth, (100) name, (101) narrow, (101a) navel, (102) near, (103) neck, (104) new, (105) night, (105a) nine, (106) nose, (107) not, (108) old, (109) one, (110) other, (111) person, (112) to play, (113) to pull, (113a) pus, (114) to push, (115) to rain, (116) red, (117) right (correct), (118) right (hand), (118a) ripe, (119) river, (120) road (or trail; path), (121) root, (122) rope, (123) rotten (especially of log), (123a) round, (124) to rub, (124a) saliva, (125) salt, (126) sand, (127) to say, (128) to scratch (as with fingernail to relieve itch), (129) sea, (130) to see, (131) seed (131a) seven, (132) to sew, (133) sharp (as knife), (133a) to shoot, (134) short, (135) to sing, (135a) sister, (136) to sit, (136a) six, (137) skin (of a person), (138) sky, (139) to sleep, (140) small (141) to smell (perceive odor), (142) smoke (of fire), (143) smooth, (144) snake, (145) snow, (146) some, (146a) to speak, (146b) spear, (147) to spit, (148) to split, (149) to squeeze, (150) to stab (or stick), (151) to stand, (152) star, (153) stick (of wood), (154) stone, (155) straight, (156) to suck, (157) sun, (158) to swell, (159) to swim, (160) tail, (160a) ten, (161) that, (162) there, (163) they, (164) thick, (165) thin, (166) to think, (167) this, (168) thou, (169) three, (170) to throw, (171) to tie, (172) tongue, (173) tooth (front rather than molar), (174) tree, (175) to turn

(change one's direction), (175a) twenty (176) two, (176a) up, (177) to vomit (puke), (178) to walk, (179) warm (of weather) (180) to wash, (181) water, (182) we, (183) wet, (184) what?, (185) when?, (186) where? (187) white, (188) who?, (189) wide, (190) wife, (191) wind, (192) wing, (193) to wipe, (194) with (accompanying), (195) woman, (196) woods, (196a) to work, (197) worm, (198) ye, (199) year, (200) yellow

TOKYO. (1) miNna, (2) -to, (3) doobucu, (3a) 'ude', (4) hai, (5) -de, (6) senaka, (7) 'waru'i, (8) ka'wa', (9) -kara, (10) 'onaka, (11) 'ooki'i, (12) tori, (13) kamicuku, (14) kuro'i, (15) ci, (16) hu'ku (17) hone', (17a) mune', (18) 'i'ki'o suru, (18a) 'oni'isaN (elder), 'otooto' (younger), (19) mo'eru (20) kodomo, (20a) cume, (20b) kimono, (21) ku'mo, (22) samu'i, (23) ku'ru, (23a) niru, (24) kazo'e'ru, (24a) naku, (25) ki'ru, (25a) 'odoru, (25b) kurai, (26) hiruma, (27) sinu, (28) ho'ru, (29) kitana'i, (30) 'inu', (30a) sita'e, (31) no'mu, (32) ka'wa'ita, (33) kire'nai, (34) hokori, (35) mimi', (36) cuci', (37) tabe'ru, (38) tama(')ŋo, (38a) 'jaqcu', (39) me', (40) 'oqkoci'ru, (41) too'i, (42) 'abura'mi, (43) 'oto'osaN, (44) ko'waŋa'ru (45) hane, (46) sukuna'i, (47) keNkasuru, (48) hi', (49) sakana, (50) 'icu'cu, (51) 'ukabu, (52) naŋare'ru, (53) hana', (54) tobu, (55) kiri, (56) 'asi', (57) 'joqcu', (58) kooru, (59) mi, (59a) 'iqpai, (59b) keŋa'wa, (60) 'aŋeru, (61) 'i'i, (62) kusa', (63) 'a'o'i, (64) hara'wa'ta, (65) ke, (66) te', (67) 'ano'hito, (68) 'atama', (69) kiku, (70) siNzoo, (71) 'omoi, (72) koko, (73) naŋu'ru, (74) mo'cu, (74a) cuno', (74b) 'acu'i, (75) do'o, (75a) hjaku', (76) rjo'oni 'iku, (77) sju'ziN, (78) 'watasi, (79) koori, (80) mo'si, (81) -ni, (82) korosu, (82a) hiza, (83) siqteru, (84) mizu'u'mi, (85) 'wara'u, (86) haqpa, (87) hidari, (88) 'asi', (89) neteru, (90) 'i'kiteru, (91) kimo', (92) naŋa'i, (93) sirami, (94) 'otoko', (95) takusaN, (96) niku', (96a) 'o'qpai, (96b) cuki', (97) 'oka'asaN, (98) 'jama', (99) kuci, (100) nama'e, (101) seŋa'i, (101a) 'oheso, (102) cika'i, (103) kubi, (104) 'atarasi'i, (105) 'jo'ru, (105a) koko'nocu, (106) hana, (107) na'i, (108) huru'i, (109) hito'cu, (110) hokano, (111) hito', (112) 'asobu, (113) hiqpa'ru, (113a) 'umi', (114) 'osu, (115) 'a'meŋa hu'ru, (116) 'akai, (117) 'i'i, (118) miŋi, (118a) zjuku'sita, (119) ka'wa', (120) mici, (121) neqko', (122) cuna', (123) kusa'qta, (123a) marui, (124) kosu'ru, (124a) cu'ba, (125) si'o', (126) suna, (127) 'ju'u, (128) ka'ku, (129) 'u'mi, (130) 'mi'ru, (131) ta'ne, (131a) nana'cu, (132) nu''u, (133) kire'ru, (133a) 'u'cu, (134) mizika'i, (135) 'uta'u, (135a) 'one'esaN (elder), 'imooto' (younger), (136) su'waqteru, (136a) muqcu', (137) ka'wa', (138) so'ra, (139) nemuru, (140) ciqcja'i, (141) kaŋu, (142) kemu, (143) subeqko'i, (144) he'bi, (145) 'juki', (146) , (146a) hana'su, (146b) 'jari, (147) hakidasu, (148) sake'ru, (149) simecukeru, (150) cukisa'su, (151) ta'qteru, (152) hosi, (153) booqkire, (154) 'isi', (155) maqsu'ŋuna, (156) su'u, (157) 'ohisama, (158) hukureru, (159) 'o'jo'ŋu, (160) siqpo', (160a) to'o, (161) 'are, (162) 'asuko, (163) 'ano'hitotaci, (164) 'acui, (165) 'usui, (166) kaNŋa''eru, (167) kore, (168) 'ana'ta, (169) miqcu', (170) naŋe'ru, (171) musubu, (172) sita', (173) ha', (174) ki', (175) maŋaru, (175a) ni'zjuu (176) hutaqcu', (176a) 'u'ee, (177) ha'ku (178) 'aru'ku, (179) 'aqtaka'i, (180) 'ara'u (181) mizu, (182) 'watasi'taci, (183) nureta, (184) na'ni, (185) 'i'cu, (186) do'ko, (187) siro'i, (188) da're, (189) hiro'i, (190) ka'nai, (191) kaze, (192) hane, (193) huku, (194) -to, (195) 'oNna, (196) ha'jasi, (196a) hataraku, (197) musi, (198) 'anatata'ci, (199) tosi', (200) kiiroi.

KYOTO. (1) 'miNna', (2) -to, (3) ''iki'moN (3a) 'tee, (4) 'hai, (5) -de, (6) 'senaka, (7) 'wa'rui, (8) 'ka'wa, (9) sa'kai, (10) ha'ra, (11) 'o'okii, (12) 'tori, (13) 'kamicuku, (14) ku'roi, (15) 'cii, (16) 'huku, (17) ho'ne, (17a) mu'ne, (18) ''iki'suru, (18a) 'niicja'N (elder), ''ototo (younger), (19) 'mo'eru, (20) 'kodomo, (20a) 'cume, (20b) 'kimono, (21) ku'mo, (22) sa'bui, (23) 'kuru, (23a) 'taku, (24) 'kaNzjosuru, (24a) 'naku, (25) 'kiru, (25a) ''odoru, (25b) ku'rai, (26)

'hiruma, (27) 'sinu, (28) 'horu, (29) 'kita'nai, (30) 'i'nu, (30a) 'sita''e, (31) 'nomu, (32) ka''waita, (33) 'kire'heN, (34) 'hokori, (35) mi'mi, (36) cu'ci, (37) 'taberu, (38) 'tama'ŋo, (38a) 'ja'ɋcu, (39) 'mee, (40) ''ociru, (41) to'i, (42) 'a'bura, (43) ''oto'ocjaN, (44) 'ko'waŋaru, (45) 'hane, (46) 'suke'nai, (47) 'keNkasuru, (48) 'hii, (49) 'sakana, (50) 'i'cucu, (51) ''uku, (52) 'naŋareru, (53) ha'na, (54) 'tobu, (55) 'kiri, (56) 'a'si, (57) 'jo'ɋcu, (58) 'kooru, (59) 'mii, (59a) ''iqpai, (59b) 'keŋa'wa, (60) ''aŋeru, (61) ''ee, (62) ku'sa, (63) 'a''oi, (64) 'hara'wa'ta, (65) ke'e, (66) 'tee, (67) ''anohito, (68) 'a'tama, (69) 'kiku, (70) 'siNzoo, (71) ''omo'tai, (72) 'koko, (73) 'docuku, (74) 'mocu, (74a) cu'no, (74b) 'a'cui, (75) 'doo, (75a) hja'ku, (76) rjo'oni 'iku, (77) sju'ziN, (78) ''wate, (79) 'koori, (80) mo'si, (81) -ni, (82) 'korosu, (82a) 'hiza, (83) 'siqteru, (84) 'mizu''umi, (85) ''wara'u, (86) ha'a, (87) 'hidari, (88) 'a'si, (89) 'neteru, (90) ''ikiteru, (91) ki'mo, (92) na'ŋai, (93) 'sirami, (94) 'o'toko, (95) 'jo'oke, (96) ni'ku, (96a) 'cici, (96b) cu'ki, (97) ''oka'acjaN, (98) 'ja'ma, (99) 'kuci (100) na'a, (101) se'bai, (101a) 'heso, (102) ci'kai, (103) 'kubi, (104) 'sara', (105) ''joru, (105a) 'koko'nocu, (106) 'hana, (107) 'nai, (108) hu'rui, (109) 'hito'cu, (110) 'hokano, (111) hi'to, (112) ''asubu, (113) 'hiqparu, (113a) 'u'mi, (114) ''osu, (115) ''ame'ŋa-'huru, (116) 'akai, (117) ''ee, (118) 'miŋi, (118a) zju'kusita, (119) ka'wa, (120) 'mici, (121) 'nee, (122) na''wa, (123) ku'saqta, (123a) ma'rui, (124) 'kosuru, (124a) cu'ba, (125) si''jo, (126) 'suna, (127) ''ju'u, (128) 'kaku, (129) ''umi, (130) 'miru, (131) 'tane, (131a) na'nacu, (132) 'nu'u, (133) 'kireru, (133a) ''ucu, (134) 'mizi'kai, (135) ''uta'u, (135a) 'neecja'N (elder), ''immoto (younger), (136) 'su'waqteru, (136a) mu'ɋcu, (137) 'ka'wa, (138) te'N, (139) 'neru, (140) 'cii'sai, (141) 'ni'oŋu, (142) 'kemuri, (143) 'curucuru, (144) 'hebi', (145) 'ju'ki, (146) , (146a) 'hanasu, (146b) ''jari, (147) 'hakidasu, (148) 'sakeru, (149) , (150) 'cukisasu, (151) 'taqteru, (152) 'hosi, (153) 'booŋire, (154) 'i'si, (155) 'maqsu'ŋuna, (156) 'su'u, (157) ''ohi'isaN, (158) 'hukureru, (159) ''o'joŋu, (160) ''oo, (160a) to'o, (161) 'a're, (162) ''ako, (163) ''anohito''jara, (164) go'cui, (165) 'u'sui, (166) 'kaNŋa'eru, (167) 'kore, (168) ''aNta, (169) mi'ɋcu, (170) 'horu, (171) 'musubu, (172) si'ta, (173) ha'a, (174) 'kii, (175) 'maŋaru, (175a) ni'zjuu, (176) 'huta-'cu, (176a) ''u'e'e, (177) 'haku, (178) ''aruku, (179) nu'kui, (180) ''ara'u, (181) 'mizu, (182) ''wate'ra, (183) nu'reta, (184) 'nani, (185) ''icu, (186) 'doko, (187) si'roi, (188) 'dare, (189) hi'roi, (190) ka'ka, (191) 'kaze, (192) 'hane, (193) 'huku, (194) -to, (195) 'o'naŋo, (196) 'ha'jasi, (196a) 'hataraku, (197) 'musi, (198) ''aNta'ra, (199) to'si, (200) 'kii'roi.

NAHA. (1) ''NNna, (2) -tu, (3) ?icimu'N, (3a) 'tii, (4) 'hwee, (5) -'uti, (6) 'kusinaga'ri, (7) 'waQ'saN, (8) 'kaa, (9) ''jagutu, (10) ''wata, (11) magi'saN, (12) 'tui, (13) 'kuuiN, (14) kuru'saN, (15) 'cii, (16) 'hucuN, (17) 'huni, (17a) ''Nni, (18) ?ii'ci'suN, (18a) ''ikii, (19) 'meeiN, (20) 'wara'bi, (20a) 'cimi, (20b) 'ciN, (21) 'kumu, (22) hii'saN, (23) 'cuuN, (23a) 'niiN, (24) 'kazuuiN, (24a) 'nacuN, (25) 'ciiN, (25a) 'mooiN, (25b) 'kurasaN, (26) 'hiru, (27) 'sinuN, (28) 'huiN, (29) hagoo'saN, (30) ''?iN, (30a) 'sicaNkai, (31) 'numuN, (32) 'kaaracooru, (33) 'ciriraN, (34) 'hukui, (35) 'mimi, (36) ''NNca, (37) 'kamuN, (38) tama'gu, (38a) ''jaaci, (39) 'mii, (40) ''?utiiN, (41) 'tuusaN, (42) ''?aNrazi'si, (43) 'suu, (44) ''?uturusa-'suN, (45) 'hani, (46) ?ikira'saN, (47) ''?ooiN, (48) 'hii, (49) ''?iju, (50) ?ici'ci, (51) ''?ukabuN, (52) 'nagariiN, (53) 'hana, (54) 'tubuN, (55) 'ciri, (56) 'hisa, (57) ''juuci, (58) ——, (59) 'nai, (59a) 'mii, (59b) 'kaa, (60) 'kwiiN, (61) 'juta'saN, (62) 'kusa, (63) ''?oosaN, (64) ''watamii'muN, (65) 'kii, (66) 'tii, (67) ?anu'ɋcu, (68) 'cubu'ru, (69) 'cicuN, (70) 'cimu, (71) ''?NbusaN, (72) 'kuma, (73) ''?ucuN, (74) 'mucuN, (74a) 'cinu, (74b) ?aci'saN, (75) 'caa, (75a) 'hjaaku, (76) ——, (77) ''utu, (78) ''waN, (79) 'koori, (80) 'musi, (81) 'Nkai, (82) 'kurusuN, (82a) 'ciNsi, (83) 'siɋcooN, (84) ——, (85) ''waraiN, (86) 'hwaa, (87) 'hiza'i, (88) 'hisa, (89)

'niNtooN, (90) ?ici'cooN, (91) 'cimu, (92) naga'saN, (93) sira'N, (94) ''iki'ga, (95) '?ohooku, (96) 'sisi, (96a) 'cii, (96b) 'cici, (97) ''?aNmaa, (98) 'mui, (99) 'kuci, (100) 'naa, (101) ?iba'saN, (101a) 'tiNbusu, (102) cica'saN, (103) 'kubi, (104) 'miisaN, (105) 'juu'ru, (105a) 'kukunu'ci, (106) 'hana, (107) 'neeN, (108) huru'saN, (109) tii'ci, (110) 'hukanu, (111) 'qcu, (112) ''?asibuN, (113) 'hiqpaiN, (113a) ''?Nmi, (114) ''?usuiN, (115) ''?aminu'huiN, (116) ?akasaN, (117) 'juta'saN, (118) 'niziri, (118a) ?NN'rooru, (119) 'kaara, (120) 'mici, (121) 'nii, (122) 'cina, (123) kusari'tooru, (123a) 'marusaN, (124) 'siiN, (124a) 'ciNpee, (125) maa'su, (126) 'sina, (127) ''?iiN, (128) 'kacuN, (129) ?u'mi, (130) ''NNzuN, (131) 'sani, (131a) nana'ci, (132) 'nooiN, (133) 'ciriiN, (133a) ''?iiN, (134) ?iNca'saN, (135) ''?utaiN, (135a) ''unai, (136) ''icooN, (136a) 'muuci, (137) 'kaa, (138) 'tiN, (139) 'ninzuN, (140) guma-'saN, (141) 'kazasuN, (142) 'kibusi, (143) 'naziqteeN, (144) ——, (145) ——, (146) , (146a) 'munu''?iiN, (146b) ''jari, (147) 'haci?Nza'suN, (148) 'sakiiN, (149) 'simiiN, (150) 'cicinucuN, (151) taq'cooN, (152) 'husi, (153) 'bunziraa, (154) ''?isi, (155) 'maqtooba, (156) 'siqpuiN, (157) 'tii'ra, (158) 'huqkwiiN, (159) ''?wiizuN, (160) 'zuu, (160a) 'tuu, (161) ''?ari, (162) ''?ama, (163) ''?aQtaa, (164) ''?acisaN, (165) hiQ'saN, (166) 'kaNgeeiN, (167) 'kuri, (168) ''?jaa, (169) 'miici, (170) 'nagiiN, (171) 'kuNzuN, (172) 'siba, (173) 'haa, (174) 'kii, (175) 'magaiN, (175a) 'nizuu, (176) 'taaci, (176a) ''?wiiNkai, (177) 'hacuN, (178) ''?aQcuN, (179) nuku'saN, (180) ''?araiN, (181) 'mizi, (182) ''waQtaa, (183) ''Nritooru, (184) 'nuu, (185) ''?ici, (186) 'maa, (187) siru'saN, (188) 'taa, (189) hiru'saN, (190) 'tuzi, (191) 'kazi, (192) 'hani, (193) 'susuiN, (194) -tu, (195) 'ina'gu, (196) ''jama, (196a) 'hataracuN, (197) 'musi, (198) ''?iqtaa, (199) 'tusi, (200) 'ciiruu.

SHURI. (1) 'N'na, (2) -tu, (3) ?icimuN, (3a) tii, (4) hwe'e, (5) -'u'ti, (6) nagani, (7) 'waQsaN, (8) kaa, (9) 'ja'kutu, (10) 'wata, (11) magisaN, (12) tu'i, (13) kuujuN, (14) kurusaN, (15) ci'i, (16) hucuN, (17) huni, (17a) 'N'ni, (18) ?iici sju'N, (18a) 'wi'kii, (19) me'ejuN, (20) 'warabi, (20a) çi'mi, (20b) ciN, (21) kumu, (22) hwiisaN, (23) cuuN, (23a) ni'juN, (24) 'junuN, (24a) na'cuN, (25) cijuN, (25a) mo'ojuN, (25b) ku'rasaN, (26) hwi'ru, (27) si'nuN, (28) hujuN, (29) hagoosaN, (30) ?iN, (30a) si'caNkai, (31) nunuN, (32) ka'aracooru, (33) tataN, (34) hu'kui, (35) mimi, (36) 'Nca, (37) kanuN, (38) kuuga, (38a) 'ja'açi, (39) mii, (40) ?utijuN, (41) tu'usaN, (42) ?aNdazisi, (43) 'wikiganu ?u'ja, (44) ?uturusa sju'N, (45) ha'nagii, (46) ?ikirasaN, (47) ?oojuN, (48) hwii, (49) ?i'ju, (50) ?içiçi, (51) ?u'cuN, (52) nagarijuN, (53) hana, (54) tu'buN, (55) ci'ri, (56) hwi'sja, (57) 'ju'uçi, (58) ——, (59) nai, (59a) mi'i, (59b) kaa, (60) kwi'juN, (61) 'jutasjaN, (62) kusa, (63) ?o'osaN, (64) 'watamiimu'N, (65) ki'i, (66) tii, (67) ?a'nuQcu, (68) çiburu, (69) ci'cuN, (70) cimu, (71) ?N'busaN, (72) ku'ma, (73) ?ucuN, (74) mucuN, (74a) çinu, (74b) ?açisaN, (75) ca'a, (75a) hjaaku, (76) ——, (77) 'u'tu, (78) 'waN, (79) ko'ori, (80) mu'si, (81) na'kai, (82) ku'rusjuN, (82a) ci'Nsi, (83) siQcooN, (84) ?uhugumui, (85) ta'kawaree sju'N, (86) hwa'a, (87) hwizai, (88) hwi'sja, (89) ni'NtooN, (90) ?icicooN, (91) cimu, (92) nagasaN, (93) siraN, (94) 'wikiga, (95) ?u'hooku, (96) sisi, (96a) cii, (96b) çici, (97) 'winagunu ?u'ja, (98) mu'i, (99) ku'ci, (100) na'a, (101) şibasaN, (101a) hu'su, (102) cicasaN, (103) ku'bi, (104) mi'isaN, (105) 'juru, (105a) kukunuçi, (106) ha'na, (107) neeN, (108) hurusaN, (109) tiiçi, (110) biçinu, (111) Q'cu, (112) ?a'sibuN, (113) hwi'cuN, (113a) ?uNcu, (114) ?u'sjuN, (115) ?aminu hujuN, (116) ?akasaN, (117) 'jutasjaN, (118) ni'ziri, (118a) ?Ndooru, (119) ka'ara, (120) mi'ci, (121) nii, (122) çina, (123) kuQcooru, (123a) ma'rusaN, (124) sijuN, (124a) çiNpee, (125) ma'su, (126) si'na, (127) ?ju'N, (128) kacuN, (129) ?umi, (130) 'NNzuN, (131) sa'ni, (131a) nanaçi, (132) noojuN, (133) tacuN, (133a) ?ijuN, (134) ?iNcasaN, (135) ?u'tajuN, (135a) 'u'nai, (136) 'i'cooN, (136a) mu'uçi,

(137) kaa, (138) ti'N, (139) ni'NzuN, (140) gumasaN, (141) ka'ʒasjuN, (142) ki'busi, (143) naduqte'eN, (144) nagamuN, (145) —, (146) , (146a) munu ʔju'N, (146b) ja'i, (147) haciʔNzasju'N, (148) sakijuN, (149) simijuN, (150) çi'cikuzijuN, (151) taqcooN, (152) hu'si, (153) bu'Nziri, (154) ʔi'si, (155) ma'qtooba, (156) şi'pujuN, (157) tiida, (158) hu'qkwijuN, (159) ʔwiizuN, (160) ʒu'u, (160a) tu'u, (161) ʔa'ri, (162) ʔa'ma, (163) ʔaqtaa, (164) ʔa'çisaN, (165) hwiqsaN, (166) kaNgeejuN, (167) ku'ri, (168) ʔja'a, (169) mi'içi, (170) nagijuN, (171) mu'subuN, (172) şiba, (173) haa, (174) kii, (175) mi'gujuN, (175a) ni'zuu, (176) ta'açi, (176a) ʔwi'iNkai, (177) hacuN, (178) ʔaqcuN, (179) nukusaN, (180) ʔa'rajuN, (181) mi'ʒi, (182) 'waqtaa, (183) 'N'ditooru, (184) nuu, (185) ʔi'çi, (186) maa, (187) sirusaN, (188) ta'a, (189) hwirusaN, (190) tu'zi, (191) ka'ʒi, (192) ha'ni, (193) su'sujuN, (194) -tu, (195) 'winagu, (196) 'jama, (196a) ha'taracuN, (197) mu'si, (198) ʔiqtaa, (199) tusi, 200) ci'iru.

YONAMINE. (1) 'muruu, (2) -ʈu, (3) hicimuN, (3a) ʔ'udii, (4) 'pee, (5) -ne'e, (6) nagaarii, (7) 'waQ'seN, (8) 'haa, (9) ''ee'ʈu, (10) ''waʈaa, (11) 'magise'N, (12) 'gaatui, (13) ʞuuru'N, (14) ʞuruse'N, (15) 'cii, (16) pucuN, (17) pu'ni, (17a) 'nii, (18) ʔici'suN, (18a) 'miimi'i (elder), 'huQʈuu (younger), (19) 'muiru'N, (20) ''waraabi'i, (20a) 'cimii, (20b) 'cinuu, (21) 'ʞumuu, (22) 'piise'N, (23) suN, (23a) 'nuN, (24) ''jumiN, (24a) 'nacuN, (25) 'ciN, (25a) 'mooru'N, (25b) 'ʞuraase'N, (26) 'πiruu, (27) 'sinuN, (28) 'puN, (29) pagoose'N, (30) 'ʔiNnu'ʞwaa, (30a) 'hicaa, (31) 'numiN, (32) 'haaracui'nu, (33) taʈa'nu, (34) 'puʞui, (35) 'mimii, (36) 'micaa, (37) 'ʞeN, (38) hu'ga, (38a) 'jaa'ci, (39) mii, (40) 'huʈiru'N, (41) 'tuuse'N, (42) ʔaNdaa, (43) 'caaca'a, (44) 'huʈuru'saa'suN, (45) 'panii, (46) 'hiʞeera'seN, (47) 'ʔooru'N, (48) 'πii, (49) 'ʔjuu, (50) 'hiciQci'i, (51) hucuN, (52) 'nagaari'N, (53) 'panaa, (54) tubiN, (55) 'cirii, (56) 'pisaa, (57) 'juu'ci, (58) ——, (59) 'nai, (59a) mi'i, (59b) 'kaa, (60) 'ʞiiru'N, (61) ''juʈaase'N, (62) 'kusaa, (63) 'ʔoose'N, (64) ''waʈaa, (65) 'kii, (66) 'tii, (67) 'ʔanucuu, (68) 'ciN'bu, (69) 'hicuN, (70) 'cimuu, (71) 'ʔubuuse'N, (72) 'humaa, (73) 'pisiizu'N, (74) 'mucuN, (74a) 'cinuu, (74b) 'hacise'N, (75) 'caN'si, (75a) 'pjaakuu, (76) ——, (77) ''uQʈuu, (78) ''wanuu, (79) ——, (80) mu'si, (81) ne'e, (82) 'kuruusu'N, (82a) 'ciN'si, (83) 'siQcu'N, (84) ——, (85) ''wareN, (86) 'paa, (87) 'πizai, (88) 'pisaa, (89) 'niNʈu'N, (90) 'hicicu'N, (91) 'cimuu, (92) 'nagaase'N, (93) 'siraa'mi, (94) ''iʞigaa, (95) 'πoose'N, (96) 'sii, (96a) 'cii, (96b) 'hicuu, (97) ʔa'mu, (98) ''jamaa, (99) 'kucii, (100) 'naa, (101) 'ʔibaase'N, (101a) 'pusuu, (102) 'hicaase'N, (103) 'ʞubii, (104) 'miise'N, (105) ''juruu, (105a) 'kunuQci'i, (106) 'panaa, (107) 'nee'nu, (108) 'puruse'N, (109) 'ʈiici, (110) 'bicii'nu, (111) 'cuu, (112) 'hasiibi'N, (113) 'picuN, (113a) 'ʔumii, (114) 'husuN, (115) 'ʔamii'nu 'puN, (116) haʞaaseN, (117) ''juʈaase'N, (118) 'zirii, (118a) ʔu'duinu, (119) haa'ra, (120) 'micii, (121) 'nii, (122) 'cinaa, (123) ʞuQ'cuinu, (123a) 'maruse'N, (124) 'siN, (124a) 'cunpe'e, (125) ma'su, (126) 'sinaa, (127) 'ʔjuN, (128) 'hacuN, (129) ʔu'mi, (130) 'mjuN, (131) 'sanii, (131a) 'nanaQci'i, (132) 'nooru'N, (133) 'tacuN, (133a) 'ʔiN, (134) 'ʔiNca'seN, (135) 'huʈaa 'suN, (135a) 'maama'a (elder), 'huQʈuu (younger), (136) ''iQcu'N, (136a) 'muu'ci, (137) 'haa, (138) tiN'ʈoo, (139) 'niNbi'N, (140) 'gumaase'N, (141) 'habaa'suN (of good smells), 'hazaa 'suN (of bad smells), (142) 'kibuu'si, (143) , (144) ——, (145) ——, (146) , (146a) 'panaasi 'suN, (146b) ''ei, (147) 'pacizasu'N, (148) 'saʞiru'N, (149) 'simiru'N, (150) 'siQʞu'NsuN, (151) taQ'cuN, (152) 'pusii, (153) buN'ziri, (154) 'ʔisii, (155) 'maʈooba, (156) 'sipuuru'N, (157) ti'da, (158) 'puQʞi'N, (159) 'ʔuizu'N, (160) 'zuu, (160a) 'tuu, (161) 'ʔarii, (162) 'ʔamaa, (163) 'ʔariʈa'a, (164) 'haciise'N, (165) πiQ'seN, (166) 'kaNgeeru'N, (167) 'hurii, (168) 'ʔjaa, (169) 'mii'ci, (170) 'nagiru'N, (171) 'musiibi'N, (172) 'subaa, (173) 'paa, (174) 'kii, (175) 'magaaru'N, (175a) 'nizuu, (176) 'ʈaa'ci, (176a) 'ʔui, (177) 'pacuN, (178) ʔaQ'cuN, (179) 'nuʞuse'N,

(180) ˈʔareN, (181) ˈmizii, (182) ˈˈwaQɾaˈa, (183) ˈdiiɾuiˈnu, (184) nuˈu, (185) ˈhicii, (186) daˈa, (187) ˈsiruseˈN, (188) ˈtaruu, (189) ˈˈɾiruseˈN, (190) ˈtuzii, (191) ˈhazii, (192) ˈpanii, (193) ˈsuuruˈN, (194) -ɾu, (195) ˈˈinaaguu, (196) ——, (196a) ˈpaɾa-aracuˈN, (197) ˈmusii, (198) ˈˈʔiQɾaˈa, (199) ˈtusii, (200) ˈˈʔawaaʔiruu.

Ratings of the test list items now follow.

### Tokyo-Kyoto

−: 3, 3a, 9, 10, 23a, 24, 73, 95, 96a, 104, 122, 138, 141, 143, 164, 170, 179, 190.

○: 139.

÷: 40, 42, 51, 61, 86, 100, 117, 121, 160, 163, 182, 195, 198.

( ): 47, 59a, 70, 75a, 76, 77, 96, 118a, 153, 175a.

### Tokyo-Naha

−: 3, 3a, 5, 6, 9, 10, 11, 13, 18a, 20, 20b, 22, 25a, 29, 36, 37, 43, 44, 46, 47, 49, 56, 59, 59a, 60, 61, 68, 70, 73, 75, 77, 81, 82a, 88, 94, 95, 96, 96a, 97, 98, 104, 117, 118a (elder), 118a (younger), 132, 133a, 135a (elder), 135a (younger), 136, 138, 140, 141, 143, 146a, 155, 157, 160, 165, 168, 171, 172, 179 184, 186, 190, 193, 196, 198.

○: 32, 72, 78, 89, 124, 162, 163, 182.

×: 24, 38, 79, 146b.

÷: 26, 40, 42, 59b, 64, 86, 100, 101, 101a, 107, 114, 119, 121, 123, 124a, 125, 131, 134 142, 149, 150, 153, 188, 195.

( ): 75a, 153, 175a.

### Tokyo-Shuri

−: Add 24, 33, 84, 110, 123, 133, 144, 175 to the Tokyo-Naha list; omit 171.

○: Add 38, 113a to the Tokyo-Naha list.

×: 79

÷: Add 45, 51, 85, 113 to the Tokyo-Naha list; omit 101, 114, 123, 153.

( ): Same as Tokyo-Naha.

### Tokyo-Yonamine

−: Add 1, 3, 24, 33, 110, 123, 133, 200 to the Tokyo-Naha list; omit 3a, 18a (younger), 98, 143, 146a, 171, 186, 196.

○: Add 37, 150, 186 to the Tokyo-Naha list.

×: 59b

÷: Add 12, 30, 51, 96b, 113, 135, 146a to the Tokyo-Naha list; omit 59b, 114, 123, 150, 153.

( ): same as Tokyo-Naha.

### Kyoto-Naha

−: Add 23a, 24, 122, 164, 170, to the Tokyo-Naha list; omit 3, 3a, 96a, 138, 179.

○: Add 139 to the Tokyo-Naha list.

×: 38, 79, 146b.

÷: Add 51, 96a to the Tokyo-Naha list; omit 40, 86, 100, 121, 149.

( ): 75a, 138, 153, 175a.

### Kyoto-Shuri

−: Add 23a, 24, 33, 84, 110, 122, 123, 133, 144, 164, 175 to the Tokyo-Naha list: omit 3, 3a, 96a, 138, 171, 179.

○: Add 38, 113a, 139 to the Tokyo-Naha list.

×: 79

÷: Add 45, 85, 96a, 113 to the Tokyo-Naha list; omit 40, 86, 100, 101, 114, 121, 123, 149, 153.

( ) Same as Kyoto-Naha.

### Kyoto-Yonamine

−: Add 1, 23a, 24, 33, 110, 122, 123, 133, 164, 170, 200 to the Tokyo-Naha list; omit 3, 18a (younger), 96a, 98, 138, 143, 146a, 171, 179, 186, 196.

○: Add 38, 139, 150, 186 to the Tokyo-Naha list.

×: 59b

÷: Add 12, 30, 96a, 96b, 113, 135, 138, 146a, to the Tokyo-Naha list; omit 40, 42, 59b, 86, 100, 114, 121, 123, 149, 150, 153.

( ): Same as Kyoto-Naha.

### Naha-Shuri

−: 33, 43, 81, 97, 110, 123, 133, 133a, 171 175.

○: 113a.

×: 79, 146b.
=: 24, 38.
÷: 6, 45, 51, 85, 101, 101a, 113, 114, 143, 150, 153.
( ): Same as Kyoto-Naha.

NAHA-YONAMINE

−: 1, 3a, 5, 18a (elder), 18a (younger) 33, 37, 43, 73, 81, 98, 110, 123, 133, 133a, 135a (elder), 135a (younger), 141 (of good smells), 146a, 171, 186, 200.
○: 9, 150.
×: 59b.
=: 24, 38.
÷: 6, 12, 30, 42, 51, 64, 75, 96, 96b, 97, 101a, 113, 114, 135, 138, 153, 188, 193.
( ): Same as Kyoto-Naha.

SHURI-YONAMINE

−: Add 97, 175 to the Naha-Yonamine list; omit 33, 81, 98, 110, 123, 133, 133a, 171.
○: 9, 113a, 150.
×: 59b.
÷: 12, 30, 42, 45, 64, 75, 85, 96, 96b, 101, 135, 138, 188, 193.
( ): Same as Kyoto-Naha.

**5.1.** Using the earlier 200 item glottochronology test list, the following totals are obtained for each rating.

| | Tokyo Kyoto | Tokyo Naha | Kyoto Naha | Tokyo Shuri | Kyoto Shuri | Naha Shuri | Tokyo Yonamine | Kyoto Yonamine | Naha Yonamine | Shuri Yonamine |
|---|---|---|---|---|---|---|---|---|---|---|
| + | 163 | 108 | 108 | 103 | 105 | 168 | 101 | 104 | 156 | 163 |
| ÷ | 13 | 19 | 16 | 20 | 15 | 9 | 21 | 15 | 14 | 12 |
| × | 0 | 3 | 2 | 1 | 1 | 1 | 0 | 0 | 0 | 0 |
| − | 15 | 54 | 55 | 62 | 62 | 11 | 56 | 57 | 14 | 11 |
| = | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 |
| ○ | 1 | 8 | 9 | 9 | 10 | 0 | 11 | 11 | 2 | 2 |
| none | 2 | 7 | 8 | 4 | 5 | 7 | 10 | 11 | 10 | 10 |
| (+) | 6 | 0 | 1 | 1 | 2 | 1 | 1 | 1 | 0 | 1 |
| (÷) | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 2 | 1 |

From this table we calculate the ratio of the total + and ÷ (this total being the so-called 'residual vocabulary') to the grand total of +, ÷, and −, with results as shown below:

| | Tokyo | Kyoto | Naha | Shuri |
|---|---|---|---|---|
| Yonamine | 0.6854 | 0.6761 | 0.9239 | 0.9409 |
| Shuri | 0.6595 | 0.6593 | 0.9415 | |
| Naha | 0.7006 | 0.6927 | | |
| Kyoto | 0.9215 | | | |

In my earlier article[3] I had obtained the following results:

Shuri and Kyoto 0.6480
Shuri and Tokyo 0.6519

These figures do not differ greatly from those determined for these dialects in the present study; whatever differences there are may be attributed to increasing accuracy.

In short, according to the new investigation, the Shuri dialect can by no means be considered closer to the mainland dialects than other Okinawan dialects, but rather it is obvious that Shuri displays the most distant numerical values of all three Okinawan dialects.

The Naha dialect is closer to the Tokyo dialect because of the greater influence of Standard Japanese.

**5.2.** When summing up the relationships between the Kyoto dialect and the three Okinawan dialects, using the revised test list, the following results are obtained

[3] See footnote 1.

[Editor's Note: This article is from Minzokugakū

(here A stands for the 100 item diagnostic list, B for the 100 item supplementary list).

| | Kyoto-Naha | | | Kyoto-Shuri | | | Kyoto-Yonamine | | |
|---|---|---|---|---|---|---|---|---|---|
| | A | B | To-tal | A | B | to-tal | A | B | to-tal |
| + | 62 | 47 | 109 | 61 | 46 | 107 | 59 | 44 | 103 |
| ÷ | 6 | 14 | 20 | 7 | 11 | 18 | 8 | 12 | 20 |
| × | 0 | 2 | 2 | 0 | 1 | 1 | 0 | 1 | 1 |
| − | 27 | 27 | 54 | 26 | 33 | 59 | 27 | 29 | 56 |
| = | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ○ | 5 | 4 | 9 | 6 | 4 | 10 | 6 | 6 | 12 |
| none | 0 | 5 | 5 | 0 | 4 | 4 | 0 | 7 | 7 |
| (+) | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 |
| (÷) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |

Calculating from this table the ratio of the total of + and ÷ to the grand total of +, ÷, and −, the results obtained are:

*A (diagnostic list)*

| | Naha | Shuri | Yonamine |
|---|---|---|---|
| Kyoto | 0.7158 | 0.7234 | 0.7128 |

*B (supplementary list)*

| | Naha | Shuri | Yonamine |
|---|---|---|---|
| Kyoto | 0.6932 | 0.6333 | 0.6588 |

*A and B grand total*

| | Naha | Shuri | Yonamine |
|---|---|---|---|
| Kyoto | 0.7049 | 0.6793 | 0.6871 |

In comparing these figures with those in **5.1** above, it can be seen that the totals have inched upward, and with respect to the A and B division of the revised test list, it should be noted that the discrepancy between divisions is considerable, particularly so in the case of Shuri.

(Japanese Journal of Ethnology), Vol. 19, No. 2 (September 1955) pp. 36–45. The translation is by Maner Thorpe, and is published here with the permission of the author and the Japanese Society of Ethnology. Dr. Samuel E. Martin has kindly read the translation and suggested one or two revisions. The accent marks /ˈ/, /ˈ/, and /ˆ/ are substituted for Hattori's use of / ⌐/, / ⌙/, and / ⊢/, respectively, in marking pitch in the original publication, and, following the precedent of Bernard Bloch, /ˈ/ is substituted for /¬ / in marking stress.

The article is of interest in two principal ways: (1) methodologically, for the fineness with which Hattori discriminates types of relationship among corresponding items on glottochronological test lists, and the notation he introduces to this end; (2) substantively, for the conclusion that Shuri is most distant of the three Okinawa dialects studied from the Tokyo dialect. Hattori's first published results had aroused apprehension because the closeness implied between Okinawan and Japanese contraverted conventional opinion; it was thought that among Okinawan dialects Shuri must be exceptionally close to Japanese. Here Hattori shows that the contrary is true. Quite apart from time depth, this shows lexicostatistics as an objective measure of distance, sometimes upsetting received opinions.]

# NOTES AND REVIEWS

LANGUAGE IN RELATION TO A UNIFIED THEORY OF THE STRUCTURE OF HUMAN BEHAVIOR: PART III (Chapters 11–17). By Kenneth L. Pike. Glendale, California: Summer Institute of Linguistics, 1960. Pp. vii + 146.

STANLEY NEWMAN

With this publication Pike concludes his three-volume treatment of language and behavior. The core of his theoretical system is the concept of trimodal structuring. According to this view, the units of language are arranged in three modes: the minimal unit of the manifestation mode is the phoneme, that of the feature mode is the morpheme, and that of the distribution mode is the 'tagmeme' (this term in Part III takes the place of the 'grameme' in Parts I and II). Each unit, furthermore, is itself trimodally structured. The manifestation mode of any unit is comprised of its nonsimultaneous physical variants, such as the allo-units of a phoneme or a morpheme; the feature mode is made up of the simultaneous components, identifying that unit in contrast to other units in the system; the distribution mode includes the class membership of the unit and its potentiality for occurring in certain positional slots. In addition, the units are structured in hierarchical systems: e.g., arranged in layers above the phoneme are such 'hyperphonemes' as the syllable, the stress group, and the pause group, each of these also being trimodally structured. Human behavior, in terms of Pike's approach, has the same structural characteristics as does language.

The initial chapter of Part III—Chapter 11—is entitled Higher-Layered Units of the Distribution Mode of the Syntagmeme it is a discusson of the hierarchical system of tagmemes. With this chapter, comprising nearly a third of the present volume, Pike completes his treatment of the nuclear concepts in his linguistic theory—the presentation of the minimal units in each of the three modes (Chapters 6–8 in Parts I and II) and the hierarchical systems of these modes (Chapters 9–11 in Parts II and III). The remaining chapters of Part III deal with subsidiary problems. Chapter 12, Trimodal Restrictions on Setting up Emic Units, is an attempt to define limits for avoiding the arbitrary multiplication of 'emic' units; this term, coined from 'phonemic,' refers to units identified in terms of their functioning within a single language or culture system, as opposed to 'etic' units, which are the physical cross-linguistic or cross-cultural elements. Chapter 13, Mode-Like Emic Units and Systems, is an application of the trimodal outlook to pitch phenomena. Chapter 14, Fused Units, and Chapter 15, Interlocking Hierarchies and Systems, deal respectively with the lateral interlocking of units in sequence and with the vertical interlocking between successive layers of a modal hierarchy or between different modal systems. In Chapter 16 Pike tackles various aspect of meaning and tries to find elements of trimodal and hierarchical structure in semantic phenomena. And in Chapter 17, The Matrix of Behavior, he draws analogies between language structure and the structuring of social groups and their behavior.

Though some minor changes in terminology and in concepts are evident since the publication of Part I (1955) and Part II (1956), the major outlines of Pike's trimodal theory remain unchanged. Like the previous volumes, Part III follows the practice of ending each chapter with a series of useful bibliographical comments, in which Pike summarizes and discusses the views of others on selected problems. Similar, too, is his style of treatment. His techniques of exposition as well as the content of his

ideas are original, sometimes startlingly so. He leads the reader through subtle and labyrinthine intricacies of argument, following the ramifications of an idea here and debating the advantages and disadvantages of a concept there, leaving the impression of a theoretical model composed of wheels within wheels within wheels.

The presentation is certainly much too complex, sophisticated, and obscure to be used as a student manual. In the outline for the total study, as originally planned and published in Parts I and II, three pedagogical chapters (Written Symbols, Linguistic Analytic Procedure, Exercises in Linguistic Analysis) were to be included in the final volume. Pike wisely decided to omit this teaching material. The book as it now stands is no longer intended for students. For experienced linguists, however, Pike's approach can provide many fresh insights and theoretical refinements, particularly in formulating the interconnections between the parts and subsystems of a language structure.

An even more important change in plan lies in the peripheral position which Pike now gives to the behavioral application of his theory. His treatment in Part I suggested that he would deal simultaneously, in the same chapter, with the verbal and the behavioral aspects of trimodal structuring: e.g., just as the manifestation mode had its minimal verbal unit in the phoneme, its minimal behavioral unit was the acteme, and presumably these two emic units were expected to exhibit similar properties and to submit to similar analytic procedures. Now in Part III Pike discusses language separately from behavior, and fewer chapters than were originally planned are assigned to behavioral applications. He frankly recognizes that the identification of behavioral phenomena corresponding to phonemes and morphemic variants, to syllables and tagmeme classes is an imaginative quest for analogies rather than a sober analysis of the essential stuff that behavior is made of. Not only behavior but now in Part III, social structure as well is explored for analogies to language. This discussion is more cautious, less enthusiastic than it was in former volumes, and it reveals a wider acquaintance with the relevant literature in sociology, anthropology, and psychology. Although Pike's theory still encompasses human behavior as the context within which language takes place, behavior is no longer conceived as an integral part of the theory. Insofar as the application of the analysis to behavior is concerned, the reader can take it or leave it. The analytic procedures are now focused squarely on linguistic phenomena, and this change is all to the good.

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THE SPARKMAN GRAMMAR OF LUISEÑO. By A. L. Kroeber and George William Grace. University of California Publications in Linguistics, vol. 16, 1960. Pp. 257.

ANDRÉ MALÉCOT

The impressive mass and diversity of A. L. Kroeber's scholarly activities in the field of American anthropology is further enhanced by the publication of the Sparkman Grammar of Luiseño. Unfortunately, the reliability of the study is questionable on several counts, and it is hence of doubtful value to the field of linguistics. In view of the fact that Kroeber, at least, does not claim to be a linguist, one would like to overlook its shortcomings, but the subject is an important one, and if work on Luiseño is to contribute to our understanding of language, it must be reviewed in the same uncompromising manner that we would apply to any other linguistic analysis.

Our first objection concerns the title, which had led us to expect a faithful and fairly complete presentation of Sparkman's work together with a parallel running commentary by Kroeber et al in which false impressions would be corrected and additional material presented. Instead, we are

confronted with a turgid and murky amalgamation from which it is virtually impossible to separate the work of any of the investigators involved. Sparkman's own Sketch of the Grammar of the Luiseño Language of California, (A.A. 7.656–62, 1908), on the other hand, is a small masterpiece of clarity and precision, despite the fact that he was also an amateur in this field. While it is true that occasional awkward terms such as 'article-pronoun' (for 'enclitic particle') appear, our own two years in the field have shown that his analysis was remarkably accurate, and that it lacks mainly in detail. We are informed that Sparkman continued with this work, developing a sizeable dictionary and grammar, and unless his mental faculties deteriorated seriously, we would expect the good qualities to persist and to be communicated to us through good offices of Kroeber and Grace. We do find references to Sparkman, sparse at first, increasing in frequency as we progress, but it is the Kroeber-Grace data that is presented as the core of the book, the comments serving merely to show where Sparkman agreed or disagreed. Sparkman is taken to task several times for his linguistic naïveté, and one instance in particular evokes our most vigorous protest: In the section concerning the verbal suffixes /-liš/, /-laš/, we read that "there is but one suffix -laš, denoting either the instrument or the habitual place of action. There was probably a separate form -liš referring only to the instrument, which in Sparkman's day was manifesting itself in a local dialect or some family lines. Sparkman, seizing on this, carried it through his paradigms, though most of his informants were actually saying -laš." (p. 156). Our own informants have used /-lɪʃ/ exclusively, branding /-laʃ/ as incorrect. Be that as it may, it would be interesting to learn how Kroeber-Grace can tell just what was and what was not said to Sparkman.

The linguistic material as a whole is very poorly organized—it could have been presented in about one third the space and with much greater clarity. Almost every chapter contains data that properly belong in others: "Phonology" contains a number of morphophonemic details; "Morphophonemics," placed where it is, is forced to plot out quite a few morphological patterns; and the chapters dealing with morphology cover all the syntax known to Kroeber-Grace. The result is that when we finally arrive at the one and one-half page chapter entitled "Syntax," we find not a single new principle and not a single word in Luiseño—all of the illustrative constructions are in English. If the morphology had been presented immediately after the phonology, the authors could then have shown in a third chapter on morphophonemics what regular changes in the arrangement or choice of phonemes are brought about by combining morphemes according to the patterns outlined in the previous one, without having to develop these patterns again. An example of this kind of wastefulness is the number of times we are told about the enclitic particles: they are roughly delineated on page 40 in a chapter describing the general "Grammatical Processes," announced again on page 56 and again on the following page, treated in a preliminary description on pages 59–60, developed at length on pages 60–67, and given a parting shot on page 172.

The prose style of the book adds to the confusion. The authors appear to have a predilection for proceeding from the particular to the general, which is, of course, the only way to gather and handle the data, but it obscures the broad structural lines of a language when it is maintained in the presentation. If this was done for esthetic reasons, to make us better appreciate the struggles of the investigators through the mass of sometimes contradictory detail, and their final triumph in unraveling the underlying structural principles, the result is disappointing since the broad lines remain too deeply buried to produce the desired

effect. Another objection which may have deeper consequences is the use of a large number of negative terms such as "positional non-occurrences of phonemes," "nonverbs," "nonaffix," "nonuse," "nonhuman," "untruncated." We tacitly assume that there is some connection between language and thought, and that an analysis of the structure of a given language reveals to some extent at least the thinking habits of its speakers. From this point of view the writers seem to imply that the Luiseños have a surprisingly large number of negative concepts—we suspect that this turn of mind is definitely not the Luiseños'. If, on the other hand, this was done for methodological economy, it should have been so stated. In general, Kroeber-Grace have a very circuitous way of saying things that are relatively simple—in fact, the very economical technical terms of modern linguistics are almost completely lacking. Affixation, for example, is defined as "the combination with a stem of one or more suffixes, viz., morphemes that do not stand by themselves" (p. 40)—could they not have used 'bound forms' in place of the last clause? Later we read that "the pronouns of Luiseño are full-fledged separate words" (p. 97)—why not free forms? Finally, one detail concerning the format: All transcriptions included in English sentences should be indicated by the customary diagonal lines. Failure to observe this can result in 'double-takes' when one reads statements such as: "The conjugation 2 stem ends in a before suffixes beginning with k, q, kw . . ." (p. 54).

Before discussing the specific peccadiloes of the book in question, this writer would like to enjoin the Americanists in general to use the IPA for their transcriptions—their traditional system was adopted frankly as a makeshift, and it throws up a needless barrier between their work and general linguistics. In what follows, we shall quote Kroeber's transcriptions as they are given but will give ours in the suggested manner. Also, no attempt will be made to report here every detail with which we disagree—this would necessitate a publication as long as the book itself.

Phonology is without question the most crucial area of linguistic analysis since it is the base on which all the other levels rest. Two years of field work by this reviewer and some internal details of Kroeber's independent work, as well as the Kroeber-Grace treatment of the present subject, have revealed some inaccuracies and weaknesses which affect the validity of the analysis as a whole. Furthermore, the idiosyncratic differences among the various informants add a degree of confusion to the picture, demonstrating why the standard practice is to base analyses on the speech of a single person, making suitable hypotheses concerning the range of individual deviation from a 'norm.'

Kroeber-Grace give 10 vowel phonemes, five of which are lengthened versions of the others. We have indications that the latter are superfluous, that vowel duration is conditioned by stress and context (whether the vowel is free or checked), but assuming that the authors' analysis of cause-and-effect is correct, we wonder why they did not simply posit extra duration, /·/, as a phoneme. We then read that "all the vowels are quite lax and are somewhat more centered than the cardinal vowels . . . esp . . . short vowels in unstressed position" (p. 5). Our observations show that they are lax only in comparison with continental European languages, certainly not with American English. However, it is true that they cluster more closely around a schwa-color than do the cardinal (Daniel Jones) vowels, and that in unstressed position they mutate readily toward schwa—perhaps it was this color instability that was interpreted as laxness. Also our investigations have shown phonemic contrasts at least between /u/ and /ʊ/—/kut/ (*elderberry*) :/kʊt/ (*fire*)—, and /ɪ/:/i/ are felt by natives to be significantly different and furthermore are

not phonetically conditioned, i.e., /hɪʃ/ (*thing*): /kiʃ/ (ACC. of *house*). We therefore question the statement that "Harring on was probably right in identifying the allophones /ʊ/ and /ɪ/, and in not according them phonemic status" (p. 251).

The consonantal system of Luiseño is a very interesting one, and we were disappointed that no mention was made of the fact that although this language has both voiced and voiceless consonants, there are no cognates. All the plosives are surds, the liquids and nasals are fully voiced except when the latter are accompanied by a glottal stop, 4 of the 6 fricatives and the single affricate are voiceless, and yet free alternation of voicing and voicelessness does not occur! The surds /ptk/ are further described as being "unaspirated, or slightly aspirated," but no indication is given as to the occurrence of the two versions. An earlier publication by Kroeber, however, does serve to corroborate our observation that /ptk/ are aspirated in terminal position and unaspirated elsewhere: In his 1907 article entitled Shoshonean Dialects of California (UCPAAE, 4.66–165, 1907) he erroneously transcribes /ptk/, respectively, as /bdg/ in *skunk* /balugat/, *stone* /doda/, *sheep* (baat), and the like—note that these mistakes are not made in final position. What happened was quite simple—to Kroeber's Germanic ear, stops required aspiration to be perceived as voiceless, and only those in terminal position have any.

Two consonants termed "labialized" are given, /kw/ and /xw/, but the /qw/ noted by Kroeber in 1909 is apparently rejected. Yet this is the one of the three that was noted most commonly by this reviewer. The question now is whether these are indeed single labialized articulations or merely two overlaid consonants. How this is interpreted is largely immaterial to the rest of the analysis, but if such cases are resolved as single articulations, so should nasal consonants accompanied by glottal stops, i.e., /tʃam?/, at least for the sake of symmetry. As for the question of whether /k/ and /q/ are allophones or separate phonemes, a minimal pair such as /pɛllak/ (*used to dance*): /pɛllaq/ (*dance, just danced*) would have been sufficient—Kroeber-Grace's preoccupation for contrasts in both stressed and unstressed positions is irrelevant. Concerning the /k/, the authors note that it is "generally more retracted than English /k/" (p. 11). In view of their other phonetic observations, it is doubtful that any of the investigators involved could make such subtle discriminations—we have not observed this subtlety. Stress in Luiseño, we are informed, is "quite definite," but there is no indication as to its physical dimensions (pitch, duration, intensity), which of these apply and in what proportions—these details will be given in the reviewer's own forthcoming study. In short, the section on phonology would have profited from an analysis of a single informant's speech and the inclusion of sufficient minimal pairs to substantiate the individuality of the reported phonemes.

As indicated earlier, the chapter entitled "Morphophonemics" is misplaced and contains a large number of elements that belong elsewhere. We are told, for example, that "-kat and -wut do appear also on a/ax stems of some verbs" (p. 29)—this is morphology! Later in the same chapter, irregularities of stress of the verb /jax/ (*say*) are outlined. This section should deal only with phonetically or contextually conditioned predictable ones, brought about by their sequential relationships—the necessity of establishing the base forms first is obvious. The number of informants, partly necessitated by the long span of time over which the study was carried out, is responsible for a regrettable degree of confusion which Kroeber compounds by discussing their idiosyncracies at the head of this chapter. Once past this hurdle, however, the principle morphophonemic changes are developed with a fair degree of order, although it is necessary, we repeat, to prefigure quite

a bit of the morphology in order to produce working material at this point.

Some rather crucial aspects of the morphology are seriously affected by initial mistakes in phonology: Although Kroeber-Grace report that "the possessive prefixes occasionally have /u/ instead of /o/" (p. 17), they use /no/, /o/, and /po/ throughout the book as the base form. Our experience has revealed a consistent and general use of /nɔ/, /ɔm/, and /pɔ/ as subject pronouns and /nʊ-/, /ʊ-/, and /pʊ-/ as possessive prefixes. One consequence of this underdifferentiation is that Kroeber-Grace can only "suggest" that /no/ in /no-eš/ ([*by*] *my side*), /no-ma·ŋay/ (*from my hand*), and the like, "are really not suffixes added to pronouns but stems preceded by possessive prefixes" (p. 99) on the basis of their lack of stress. Had they been sensitive to the difference in vowel color, they could have made a firm assertion here.

It is in this chapter that the long list of illustrations involving the verb *to pay* begins—it is transcribed /neči/. By the authors' own observation, single nonfinal consonants belong to the syllable whose nucleus is the following vowel, not the preceding one—this makes /ne-/ free. Yet, when our informants heard the word pronounced in this way, they always said that it was not the verb *to pay* at all, but *to stroll around*, the former requiring a tonic vowel checked by two consonants /nɛttʃɪ/. The authors chide Sparkman for a "forced" vowel color difference between the two words and note the difference in vowel duration (p. 155), but they overlook the fact that the first syllable of *to pay* ends in a consonant.

Finally, since Kroeber-Grace have chosen this chapter to note the sporadic use or omission of the glottal stop (p. 20), particularly in intervocalic position, we shall suggest at this point that perhaps it should not have been given full phonemic status—sometimes it is phonemic, as shown in the minimal pair /nʊka?mɪ/ (*my grandchild*): /nʊkamɪ/ (*my son*); sometimes it is not, its use varying roughly with the style and rapidity of speech, i.e., /tʃɔ?n/:/tʃɔɔn/ (*all*); and sometimes its position is unstable, i.e., /tʃa?am/:/tʃam?/ (*we*)—for this reason, we have followed Harrington's practice of indicating it by /?/.

The third chapter, entitled "Grammatical Processes" is one of the best written, clearest, and linguistically most interesting. It does exactly what it promises, proceeding from the general to the particular (we note that in the preceding chapter, the authors placed the section on phonological idiosyncracies under the rubric "General"). We have relatively few comments to make here: First, we read that "there is no trace of infixes" (p. 40) in Luiseño. Although this depends largely upon a definition of terms, it is noted that /nɔn/ (*I*) + /ʃʊ/ (interrogative enclitic particle) > /nɔʃʊn/. Then, there is the reassertion that noun suffixes "which indicate their 'noun-hood' . . . cannot coexist in the same word with the possessive prefixes." It happens that there are a number of words, exceptions perhaps, that can indeed take both elements simultaneously, i.e., /nʊtula/ (*my ash*), /nʊjujɪt/ (*my snow*), /nʊmɔjla/ (*my moon*). Finally, all Luiseno suffixes are given in an alphabetical list, the descriptive function of which is not at all clear. Other points that are amplified in the succeeding sections of the book will be discussed later. In short, this chapter, the following one entitled "Classes of Words," and the one on syntax, together, form a summary of the Kroeber-Grace work that can profitably be read separately from the rest.

The chapter on "Nouns" opens with a lengthy discussion concerning whether noun absolutive suffixes have meanings of their own or whether the choice of which one is appended to a given stem is a function of phonetic context. This question has also been of great interest to this reviewer, and our conclusions differ considerably from

those of Kroeber-Grace. First, we disagree with the conclusions they draw from their own data, that there is no correlation between meaning and distribution. By an application of the chi-square statistic to his table of page 71, it was determined that the probability of obtaining such a departure from a random distribution by chance alone is less than one in a thousand. We were able to obtain an even better correlation by a different system of segmentation; Kroeber lists /-s/, /-ča/, /-t/, /-ta/, /-l/, /-la/, and /-ø/, while we have separated them as follows: /-ɪʃ/, /-aʃ/, /-tʃa/, /-at/, /-ɪt/, /-ʊt/, /-ta/, /-al/, /-l/, /-la/, plus others that Kroeber-Grace treat separately —/-mal/, /-wʊt/, /-kat/, /-ka/, /-kɪ/, /-mɪ/, /-na/, /-ɪ/. The correlations indicate definite meanings of classes of meanings which suggest that at one time they might have been free forms themselves. We also conducted a rather interesting experiment in which we asked our main informant to coin words that do not exist in Luiseño, such as "battleship," "cruise-steamer," "man-eating plant," "laughing-gas," etc., with appropriate absolutive suffixes, the results of which indicate that the Luiseños definitely attribute meanings to them. The details of this work are withheld at this time pending the publication of our own work.

Linguists who are not native speakers of the language they are investigating are perfectly justified in stating what the language contains, but any assertion concerning what is lacking is highly tenuous. Kroeber-Grace were mistaken when they wrote that personal pronouns "lack the locative -ŋa" (p. 98). On the other hand, their pronoun system is overdeveloped—it includes several possessive-plus-noun forms noted earlier, i.e., /nu-ma·ŋay/ and the so-called "benefactive" /neymax/ which, we suspect, is the objective /nej/ plus a unique enclitic.

Although the Luiseño system of verbal suffixes is rather complicated in itself, its presentation would have been simplified if Kroeber-Grace had grouped them strictly on the basis of their functions—1) those showing the relationship between the verb and its objects (causative, transitive, plural object, etc.), 2) modal (desiderative, potential), and 3) inflective (tense suffixes)—rather than classing these under the heterogeneous headings, "stationary, derivational, and inflectional," which results in some mixing of functions. Under "derivational," for example, we find /-nɪ/ (transitive, causative), /-ma/, /-lut/, /-katum/ (inflective—respectively: present usitative, future punctual singular and plural), and /-viča/, /-voto/ (desiderative and potential). Three suffixes in particular should have been grouped together: /'-vi/ and /'-pi/ which we find under the heading "stationary" and /-qala/ which is under "derivational". The first remained a mystery to the authors, and the second was only partly understood. Actually, the temporal relationship between main and dependent clauses is shown by which of these three is used: /-vɪ/ places the action of the dependent clause before the time of the main clause, /-pɪ/ places it afterwards, and /-qala/ makes the two verbs relate to simultaneous acts or states, i.e.:

/ʃɔwɔ'qʊʃ pɔjk nʊ'ɔvɪ'vɪ/ ([*He*] *was afraid I had given it to him*).

/ʃɔwʃ'qʊʃ pɔjk nʊ'ɔvɪ'pɪ/ ([*He*] *was afraid I was going to give it to him*).

/pʊʃun lɔvɪman pɔjk nʊ'ɔvɪ'qala/ ([*He*] *will be happy when I give it to him*).

The writers also list as suffixes /'-ra/, /'-ši/, /'-či/, /'-ča/, /'-wi/, and /'-wa/, yet admitting that for these "no unsuffixed stems are known . . . , and their force remains unclear" (p. 136). Without any demonstrable criteria for classing these as suffixes, we wonder at such omniscience. On page 118, we read that "an adjective by Sparkman's translation is net 'pregnant.' FC [Felix Calac, Kroeber's 1904 informant] gave net-up (with syntactic enclitic) 'she is pregnant,' which suggests a conjugation 3

stem net 'to be pregnant,' related to neví?." This is sheer nonsense—adjectives are commonly uttered in isolation, and the addition of the enclitic /-up/ intensifies its syntactic independence, while verbs require at least a personal pronoun unless they are in the imperative.

All the pertinent material on reduplication is presented, but again in so confused a manner that this truly fascinating Luiseño mechanism does not emerge as it should. In simple terms, a large number of verbs have four characteristic root forms as a result of reduplication. The first two are disyllabic, one whose stressed vowel is checked by a double consonant and is consequently short, and one whose stressed vowel is free and followed by a single consonant and is consequently long. The other two are reduplicated to tetrasyllabic forms, one a proparoxytone and the other a paroxytone, the stressed vowel in each case followed by a double consonant. The disyllabic form with the short vowel and double consonant indicates that the action is accomplished in one stroke, with one decisive gesture, or on one object. With a long vowel and single consonant, it indicates that the action is accomplished with several or many gestures (strokes), more slowly, or simultaneously (at least in the same sitting) upon a number of objects. The proparoxytone indicates that the action is repeated carefully or performed carefully and successively on a number of objects. Finally, the paroxytone indicates frenzied or aimless repetition of the act in question. Examples as follows:

/tʃɔrrɪʔ/ (*cut with one stroke*).

/tʃɔrɪʔ/ (*saw through* [*it*] *carefully*).

/tʃɔrɔttʃɔrɪʔ/ (*cut many*).

/tʃɔrɔtʃɔrrɪʔ/ (*chop carelessly, cut firewood*).

Occasionally, there are exceptions, various forms of a given verb having radically different meanings, and a number of morphophonemic changes occur (mostly substitutions of consonants in reduplicated forms), but these are of secondary importance.

The texts are all interesting per se, and it is appropriate in the context of Kroeber's book that a number of informants and all the investigators involved in Luiseño to that point should be represented. However, it is impossible to carry out a linguistic comparison of these fragments beyond a very superficial level because of a number of variable factors—different linguistic backgrounds of the investigators, possible dialectal differences among the informants, and different systems of notation. Kroeber-Grace has followed the practice of many Americanists in giving literal English translations of these texts. This, we feel, is a mistake. There are no exact equivalents from language to language, and a distortion is introduced into the English which does not characterize the Luiseño—Pablo Tac's translation in Spanish of Text 16a is much more satisfying and revealing. The statement that "the adjoining 'literal' translation seems sufficient to reveal the essential meaning of the Luiseño discourse, at least to any one who has read the grammar" is wishful thinking—the reviewer has read the book as assiduously as one would the Koran for the past several months and is still unnerved each time as this section approaches. It is the Luiseño rather that explains the English.

The appendices constitute a valuable collection of hitherto scattered data by Pablo Tac, a "Luiseño neophyte" who worked in Rome with Cardinal Mezzofanti from 1834 to 1841, John P. Harrington, who published a phoneme list and other data in a 1933 reprint of Boscana's *Chinigchinich*, and Kroeber's analysis of the "Place of Luiseño in Uto-Aztecan," together with a discussion of loan words. His own earlier linguistic work is conspicuously absent. A number of comments on Tac reveal points with which we are in closer agreement than with Kroeber-Grace, particularly with respect to phonemization. We read, for example, that

"the consonants seem to be doubled for length compensating for shortness of a preceding vowel in the first syllable of verbs" (p. 223)—reverse the cause-and-effect and we concur—and "doubled vowels in the grammar seem most frequently to denote repetitions separated by a glottal stop"—Tac also evidently did not consider it phonemic here.

Kroeber's late discovery of the Harrington material evidently caused some last-minute scrambling resulting in at least one change in phonological conclusions which, in turn, should have been reflected in appropriate revisions throughout the book. The authors concede that now, "any consonant which . . . is immediately preceded by a short stressed vowel, and immediately followed by any vowel in the same word, is to be read as a double consonant" (p. 249), but still do not understand the role of consonant clusters in determining vowel duration—again the question of what is the cause and what is the effect.

Despite the severity of our preceding comments, we still feel that the publication of the Kroeber-Grace work was justified. It was, after all, quite possible that no one would ever investigate this rapidly dying language again, and certainly the work of Pablo Tac, Sparkman, and Harrington could not be allowed to stand unchecked. It is simply regrettable that the Kroeber-Grace material could not have been presented by itself to stand on its own merits. What is surprising is that the corroboration of George W. Grace, a professional linguist, did not result in a more modern and polished treatment. In closing, we respectfully request that the Sparkman data, in their entirety, eventually be published as originally recorded—other workers in the field can then draw their own conclusions about the man and the Luiseño language of that epoch.

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## DICTIONARY OF THE AMERICAN INDIAN.

By John L. Stoutenburgh, Jr. New York: Philosophical Library, 1960. 462 pages.

ZDENĚK SALZMANN

In reviewing a work such as this Dictionary, one is expected not to question the author's purpose, but to comment critically on how well he has accomplished the task he has set for himself. Not quite disposed to base my remarks upon the statement found on the jacket of the book, I looked for an introduction by the author, who is the executive director of Wisconsin's Marathon County Historical Society, but to my surprise found none. Therefore it seems fair to me to examine the Dictionary with respect to its internal logic and to indicate how well and how reliably it will serve its users, whoever they happen to be. It may as well be said at the outset that in my opinion the volume fails on both counts.

To begin with, one may wish to know what territorial coverage is intended by the title of the book. An answer of sorts can be found under the entries of **Eskimo** (pp. 101–2), in which the author explains why the Eskimos have not been included in the dictionary, and of **Indian** (p. 156), from which the two quotations below are taken.

> . . . . To all intents and purposes the American Indian, as referred to in literature and history of the United States, is thought of as those tribes who live north of Mexico and were here at the time of the settlement and who took an active part in the early history of the United States. . . . . . . The name [Indian] is now meant to include the aborigines of North and South America. However, the term as used in this book, is meant to include the Indians north of Mexico, not including the Eskimo (q.v.). There are experts who are for and against including the Eskimo along with the other early people of North America. This book deals with the Indians of the United States, as such, for practical intents and purposes.

No wonder that the selection of entries is in many instances puzzling when the author is not clear about the scope of his own work! As a result, although the entries include **Eskimo, Beothuk, Haida,** and **Bellacoola,**

the Dictionary is silent on the Aleuts, Kwakiutl, and Tlingit.

Let us now examine in some detail the entries under the first two letters of the alphabet, inasmuch as they are representative of the entries of the entire work. The letter A (pp. 1–23) consists of 153 entries, the letter B (pp. 24–42) of 135 entries. Of these 288 entries, 79 give place names, 60 define ethnic or linguistic divisions, 57 merely cross-refer to other entries, 41 describe some of the more common elements of the various North American Indian cultures, 31 simply translate certain Indian words into English, and 15 refer to persons, with 5 entries belonging to categories other than those set up above.

Of the 79 entries referring to places, 75 appear to be based entirely on the Handbook of American Indians North of Mexico (Bulletin 30 of the Bureau of American Ethnology, Parts 1 and 2 of which appeared in 1907 and 1910 respectively). Just what the author's basis was for selecting the place names that appear in his dictionary from among the more numerous entries of the kind in the Handbook is not clear. To illustrate, Stoutenburgh includes **Abayca** (mistakenly for **Abayoa**; see below), accorded by the Handbook only 4 lines, but omits **Abo**, to which the Handbook devotes 42 lines. The author's paraphrastic summaries of the Handbook's articles are frequently confusing and occasionally incorrect, as may be shown by the following pair of entries:

> Handbook, Part 1, p. 1: **Abayoa**. A Tequesta village at the s. extremity of Florida pen., mentioned in connection with the expedition of Ponce de Leon (1512).—Barcia, Ensayo, 2, 1723.
>
> Dictionary, p. 1: **Abayca**
>
> Mentioned by Ponce de Leon in 1512 [*sic*]. This Tequesta village was situated on the southern end of Florida.

A great majority of the place-name entries of the dictionary strike me as being of possible interest only to the rather specialized students of ethnohistory (consider a sample of the first twenty of these entries: **Abayca** [*sic*], **Abihka, Abikudshi, Abiquiu, Abmoctac, Accomac, Acconoc, Acela, Achillimo, Achois, Achougoula, Achsinnink, Achusi, Acoma Pueblo, Acoti, Aegakotcheising, Agacay, Agawam, Agawano, Aguacay**). However, such students will no doubt be aware of the existence of the Handbook and will wisely refer to it as the original and more complete and reliable source, which in addition appends to its articles extensive and valuable synonymies and bibliographies.

Only three entries are new: **Allegheny, Aztec** [Ruins] **National Monument,** and **Bandelier National Monument**. The only material given under the entry **Acoma Pueblo** which is not summarized from the Handbook concerns the distance of the pueblo from U. S. Highway 66 and from Albuquerque.

While many places are included which to most of us have lost almost all of their significance (e.g., **Amoque**, a former Maricopa rancheria in southern Arizona), a number of items about which a student of the American Indian may wish to seek information are not listed. Among these, to be found on any automobile map, are Ackia Battleground National Monument (Mississippi), the site of the battle in which Chickasaw Indians defeated the French; Angel Site (Indiana), a partly excavated prehistoric village; Bad River Indian Reservation (Wisconsin); Bay Mills Indian Reservation (Michigan); and Betatakin, a well-preserved ruin of a cliff village of the Kayenta Anasazi (Navajo National Monument in Arizona). Finally, one must raise a strong objection to the author's practice of defining historical Indian settlements with no mention of the fact that they are no longer extant. An entry such as **Byengeahtein**: A village of the Nanticoke, located in Lancaster County, Pennsylvania (p. 42) is at best confusing; compare Handbook's entry, p. 178: **Byengeahtein**. A Nanticoke village in 1707, proba-

bly in Dauphin or Lancaster co., Pa.—Evans (1707) in Day, Penn., 361, 1843.

What I have said above applies even more fully to the second category of entries—ethnic and linguistic divisions. All 60 entries are based on the articles of the Handbook, but they are selected haphazardly and digested in a most careless fashion. An example of gross irresponsibility is the entry **Baguiburisac**; instead of a summary of the Handbook's corresponding article, the Dictionary's entry **Baguiburisac** summarizes the Handbook's next article **Bahacecha.** The very inquisitive user will be happy to find the various clans of the Pecos Indians included (**Alawahku, Allu, Amu,** etc.), but he will look in vain for the Achumawi, Anasazi culture, Apalachee, Atsugewi, Biloxi, and Blackfoot—to mention just a few important omissions. The complete dependence of Stoutenburgh's work on the Handbook furthermore excludes any of the revisions made in the linguistic classification of Indian languages by Sapir and others after 1910.

Many of the 57 cross references are of a very curious sort—**Acorn**: See anafkimmens; **Alder**: See the Navajo, g'ish; **Alive**: See kekewh; **Apple**: See maracah; **Arm**: See mackatahone; **Arrow feathers**: See assaconcawh; etc. The user who pursues these references will no doubt be surprised at his findings: **Anafkimmens**: The Powhatan for acorn; **Assaconcawh**: This is the Virginia Indian term which is used to describe the feathers on an arrow; etc. However, a prime example of the informal scholarship the Dictionary displays is the following pair of entries: **Bow**: See auhtab; **Auhtab**: Powhatan Indian for a bow, as in bow and arrow. See bow.

I cannot easily ascertain the author's source of the many Powhatan lexical items, such as amkonnmg *poisonous blossom of the black cherry*, cawmdgus *bramble*, mahcatawaiuwh *black*, noufvmon *below*, and puttaiquapifson *hat*, all given the prominence of entry. The reviewer fears that they will help to perpetuate the still widespread myth that Indian languages are for the most part a jumble of unpronounceable and unarticulated grunts That Stoutenburgh could profitably inform himself better about American Indian languages rather than impart information about them, is evident from his article **Languages** (p. 210), which will be of particular interest to the readers of this journal:

> The American Indian languages have a variety of structures and phonetics. Many of the languages are similar in sound to those who speak Scotch. [This gratuitous generalization can be easily traced to the Handbook, Part 1, p. 757, LANGUAGES:". . . . Particularly frequent are sounds produced by contact between the base of the tongue and the soft palate, similar to the Scotch *ch* in *loch*, and a number of. . . ."] It is difficult to estimate the number of words in the Indian languages. The differences in the noun and the verb are often very indistinct. Many influences enter into the Indian languages, such as contact with other tribes and the capture of their women who speak another dialect, which is then absorbed into the tribe, where some of each dialect is used. Through the years this is changed.

The articles that bear a direct reference to the culture of the Indians follow generally but not exhaustively the Handbook, but since they are too condensed to be well balanced and since the Dictionary is not illustrated, they convey little information. The following entries are found under A: **Actinea, Adobe, Adzes, Agriculture, Altar, Alum, Anchor stones, Andesite, Archaeology, Architecture, Arrow, Artifact, Atlatl, Awl,** and **Axes.** In my opinion entries which should have been included would have dealt with acculturation, adoption, adornment (there is no general entry concerning decoration, jewelry, or ornaments), animals, archery, and art.

All biographical entries under A and B refer to persons of Indian blood and are based wholly on the Handbook. This latter fact doubtless explains the omission of some of the names from recent history which I feel should have been included, e.g., Black Elk, Franz Boas, and John Collier.

The five remaining entries, not fitting any of the categories I have spoken about, are **Algonkian** (geological term), **Bible, Blowout** (geological term), **Breccia** (petrological term), and **Bureau of American Ethnology**. This last entry covers the history of the Bureau up to 1902 in less than five full lines of print. No mention is made of the many valuable activities of the Bureau, even though one of the outstanding reference works prepared by it—the two-volume Handbook of American Indians North of Mexico—unfortunately made this Dictionary possible. Nor does one learn of the existence of the Association on American Indian Affairs, which publishes the quarterly The American Indian, or of the Bureau of Indian Affairs.

It is surely unnecessary to review the rest of the book, for as must be obvious by now it is for the most part an insipid digest of the Handbook, which the author not only frequently misread but also used without the slightest attempt to bring its information up to date where necessary. How otherwise would the author be content with quoting the population figure for the Navaho Indians as over 28,000 in 1906 when their present number approaches 100,000? How can the jacket of the book state in seriousness that among other things this is "an up-to-date source book . . [and] the product of five years of research, interviewing and travel in the United States"?

The Dictionary now sells for ten dollars, but in a couple of years it will no doubt be offered by bargain houses at about a third of its original price; even then the book will be expensive. In summary, and to my regret, this is a work that should not have been published.

SEDONA, ARIZONA

DICCIONARIO HISTÓRICO DE LA LENGUA ESPAÑOLA [1st Fascicle.] Real Academia Española, Seminario de Lexicografía: Director, Julio Casares; Subdirector, Rafael Lapesa Melgar; Redactor Jefe, Salvador Fernández Ramírez. Madrid, 1960. lxii, 112 pp.

WILLIAM BRIGHT

In 1933 the Royal Spanish Academy began publication of a Historical Dictionary of the Spanish Language, which, however, was discontinued at the second volume. We now have a new beginning under the same title, but with five times as much material as the earlier effort. This first fascicle contains a preface, list of abbreviations, an abridged listing of the literature cited (a full listing being reserved for later), and entries from A (the preposition is given in 96 meanings, on 23 pages) to abolengo. The entries are comparable to those of the Oxford English Dictionary, presenting variant spellings, identification of form-class, etymology, definition, and dated quotations from textual materials—a minimum of five, when available, for each meaning of each word. Coverage is not limited to peninsular Spanish, but includes Judeo-Spanish, Philippine Spanish, and all American varieties. In this last regard, the first fascicle was evidently prepared too early to include materials from F. J. Santamaría's new Diccionario de Mejicanismos (Mexico, 1959), but we may expect this lack to be remedied in following numbers.

Etymologies are not the main concern of this dictionary, but brief information is given. It is in this area that some criticisms can be made: for instance, of the practice of citing Latin nouns in the nominative case. It is surely misleading to list abad *abbot* as derived from the Latin nominative abbas, since the Spanish /d/ is to be understood in terms of the accusative abbāt-em. In the case of words borrowed by Spanish from non-European languages, the etymological entries usually give only the name of the language, without citing the original form of the words. In many cases, of course, the original form is unrecoverable, but in other cases specific etymologies can be supplied. For example: ababábite *plant sp.*

*of Veracruz* may be derived, so far as phonology is concerned, from dialectal Nahuat *āba-bābit, corresponding to Classical Aztec āua-quāuitl *oak tree*, from āua-tl *oak* + quāuitl *tree*.[1] The apparent shift in meaning, however, remains unexplained. abacá *Manila hemp*, simply given as "nombre indígena", is traceable to Tagalog abaká.[2] abada, bada *rhinoceros* is said to be from Malay; the form in that language is badak [bádaʔ].[3] abal, abalá *fruit sp. of Yucatan* is derived by F. J. Santamaría from Maya abal *plum*, abal-ha *water plum*;[4] the work under review quotes Santamaría's definition, but omits his etymology. abasca *rough woolen cloth* must be from Quechua ahuascca [awáska] *cloth*.[5] In addition, the following words of presumed Amerindian origin lack etymologies in this fascicle; perhaps readers of IJAL can fill some of the gaps: ababán *plant sp. of the upper Paraná*, ababaya *papaya*, ababuy *bush sp. of Central America*, abagó *selected portion of something* (from Colombia), abalbán *hazel nut of the Indies* (East or West?), abalón *plant sp. of South America*, a(l)baco *tree sp. of Colombia*, abataque *plant sp. of Colombia*, abatí-timbay *tree sp. of Paraguay* (Guarani abatí *corn* + ?), abey *tree spp.* (said to be from Taíno), and abipón *Indian of the Paraná region*.

The value of this dictionary is not, of course, so much in the etymologies which it states, as in the detailed histories of words and their meanings within the Spanish language. These histories can be of indispensable value to the etymologist, including the student of American Indian linguistics. For instance, the word for *dog* in several Californian languages is čúču, čúčo, which appear to be from Spanish chucho *dog*. But what of Esselen šoošo, Yana suusu, Nisenan suku, Central Sierra Miwok čukúʔ, Karok čiši·h, Yurok ćišah, Chukchansi Yokuts če·xaʔ[6] To these we may add equivalents from Mexican languages: Tarahumara kočí, Huichol sɨ́·kï, Cora tsï'ï, Aztec čiči, Totonac čičí', Chol and Tzotzil ts'i'.[7] In view of the wide spread of such forms in America, we must consider the possibility that Spanish chucho is a borrowing from a New World language. This possibility can only be ruled out if the word is found to occur in Spanish prior to 1492. To take another case, many American languages have words of the type mis *cat*; and Spanish contains such a syllable, used to call a cat. But Aztec miz-tōn *cat* is a regular diminutive of miz-tli *puma*, and Spanish mis could conceivably be derived from the Aztec stem.[8] To settle the matter, we must know whether mis *cat* occurs in pre-conquest Spanish. It is such information as this which the work being

[1] Classical Aztec forms are from Alonso de Molina, Vocabulario en Lengua Castellana y Mexicana, Mexico 1571 (facsimile edition, Madrid 1944), with vowel length supplied by reference to Harold and Mary Key, Vocabulario Mejicano (Mexico, 1953). The changes of earlier Nahua /kʷ/ and /w/ to /b/ in Eastern dialects is described by Juan A. Hasler, La posición dialectológica del Pipil como Parte del Nahua del Este, América Indígena 18. 333–39 (1958); see p. 338.

[2] Cf. J. Corominas, Diccionario Crítico Etimológico de la Lengua Castellana (Madrid, 1954).

[3] Sir Richard Winstedt, An English-Malay Dictionary (Singapore and London, 1949); cf. also the entry in Corominas.

[4] Diccionario de Americanismos (Mexico, 1942).

[5] Vocabulario Políglota Incáico (Lima, 1905), s.v. tejido.

[6] Cf. W. Bright, Animals of Acculturation in the California Indian Languages, UCPL 4. 215–40 (1960).

[7] Data are from the following dictionaries: K. S. Hilton, Vocabulario Tarahumara (Mexico, 1959); J. B. McIntosh and J. Grimes, Vocabulario Huichol-Castellano Castellano-Huichol (Mexico, 1954); A. and M. McMahon, Vocabulario Cora (Mexico, 1959); P. Aschmann, Vocabulario de la Lengua Totonaca (Mexico, 1956); J. and E. Beekman, Vocabulario Chol (Mexico, 1953; K. and N. Weathers, Diccionario Español-Tzotzil y Tzotzil-Español (Mexico, 1949). Transcriptions are normalized. Sapir has suggested that Aztec čiči is from *kiči, from Proto-Uto-Aztecan *kuči; see p. 395 of his Southern Paiute and Nahuatl, part 1, JSAP 10. 379–425 (1913).

[8] Cognates in other Uto-Aztecan languages are hard to find; Huichol má·ye and Tarahumara mawiyá *puma* may be doubtfully suggested.

reviewed will provide. It should be warmly welcomed by Americanists, as well as by the world of scholarship in general.

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## SOME REMARKS ON TEKNONYMY IN ARAWAKAN

DOUGLAS TAYLOR

It is perhaps characteristic of Cariban languages that relations by marriage are designated by reference to nearest common kin—by teknonyms, that is, even when no such child exists. So for example, in Karina, *my mother-in-law* = ïme *my child* + notï *grandmother*, *my daughter-in-law* = parï *my grandchild* + sano *mother*, and analogously with their male counterparts. In the same language, according to de Goeje, a woman addresses her brother's wife as metaton (me- *child*, -ta *verbalizer*, -ton *agentive*) '*childster*', to coin an English equivalent; while husband and wife address one another as metano (-ta *in*, -no *one who is*?) or metai (-tai *out off*?). Such teknonymy is not confined, in South America, to the Cariban linguistic stock. Among modern Arawakan languages, Lokono ireiu *wife* and ireti *husband*, composed respectively of -iu *mother* and -ti *father* together with ire- *child*, may or may not be unique so far as transparency of these terms' analysis is concerned; but it is clear that similar constructions were once widespread in Arawakan; and to the linguist it is the more obscure members of this or of any other kind of compound that are of main interest, since comparison may enable him to discover in them cognates, unattested elsewhere, of common morphemes belonging to some other language or languages of the same stock.[1]

Thus Lokono iretu *wife*—perhaps a more usual term than its synonym ireiu—apparently likewise contains ire- *child*; though common sense balks at accepting -tu *daughter* as its second member. But when we find Canamare atu, Piapoco atua, Cujisenajeri nato, Adzaneni ndoa and Piro ndo, all meaning *mother* (cf. also Manao atukunyuro *grandmother*, akekuny *grandfather*), it seems reasonable to assume that a Lokono cognate of these forms, either lost or having changed its reference to *daughter* elsewhere (cf. Island-Carib ítu *elder sister*), is contained in iretu *wife*.

Similarly, only comparison with Lokono makes it clear that Island-Carib iráho *little one*, *child* and iráiti *husband* once had a morpheme in common, and that the latter term then contained a morph -iti *father*, cognate with its Lokono equivalent, but replaced elsewhere by -(ú)kusi(li) *father*, cf. -(ú)kusu(ru) *mother*, which I cannot analyse. On the other hand, Manao irakaro *mother* and irakari *father* apparently contain a cognate of Lokono ire-, Island-Carib ira-;

[1] Arawakan forms cited in this note have generally been drawn from the oldest records available to me: from Raymond Breton's 17th-century Dictionnaire caraïbe-français et français-caraïbe for Island Carib, from the anonymous 18th-century Arawakisch-Deutsches Wörterbuch in tome VIII of the Bibliothéque Linguistique Américaine for Lokono and from the Piapoco, Caouiri, Baré, Baniva and Yavitero word-lists in the same volume. I have also made use of the comparative Arawakan vocabulary in C. H. de Goeje's The Arawak Language of Guiana (Amsterdam, 1928) and of the same author's article, La langue manao, in the proceedings of the 28th International Congress of Americanists (Paris, 1947), pp. 157–71.

Except for direct quotations (placed between inverted commas), the spelling of Island Carib and of Lokono forms has been modified as follows. In the case of the former, I have followed my own analysis of the language (writing /u/ for [o] and [u], /o/ for a vowel which is now back unrounded but may have been front rounded in Breton's day, and nasalized vowels as such—that is, with a hook). In the case of Lokono, I have retained the vowel-symbols of the record, but have replaced semivocalic j and w by i and u and double consonants by simple letters (so: -tt- by -t-); a procedure which seems to be as phonologically justified in Lokono as it is in Island Carib. For other languages, I have left the record unchanged except where confusion might result, as in the case of the different values assigned to 'j' by English, French, German and Spanish recorders.

and the same may well be true of Piapoco kirasiu *little girl*, kirasi *little boy*.

Piro ndo *mother* seems to be contained in its anendu *wife* (cf. aneri *husband*), whose first member would then most likely be cognate with Maipure ani *child* (cf. Baniva and Manao tani or itani with the same meaning, and Ariti ani *small*); Caouiri anirikare *father* is comparable in part with its Piapoco equivalent, aniri (and with Piro aneri *husband*), in part with its Manao equivalent, irakari' (Most records available to me use a non-phonemic spelling.)

Ariti ianitiu *wife* and ianini *husband* have in common a form that appears to be cognate with Island-Carib ſani *wife*; which may therefore have come into use as an abbreviation after the loss of a related word for *husband* (replaced by iráiti). I suspect that the Ariti terms are or were teknonyms, and that ſani is related to (if not cognate with) itani, tani and ani *child* (see above). Unfortunately I lack data which would enable me to determine the status and meaning or function of Ariti -tiu and -ni; and, if they are mere suffixes marking grammatical gender, iani- may rather be a cognate equivalent of Cauixana cinani *person*. The latter suggestion seems less likely because Ariti (which has no bilabial stop) usually preserves *n in positions where Lokono and Island Carib have lost it, as in: A hinama : L & IC bíama *two*, A ina : IC eié-ri *man*, A inu : IC ſu (L aiu-mun) *up*, *high*, A ninise : L ie (IC inínie > iɸie) *tongue*. However, Ariti does show some variants with and without the nasal, as in: (n)ahe *bone*, (n)utia *claw* and u(m)i *snake*.

Other Arawakan terms for *wife* and *husband* that I have found recorded are not susceptible of analysis without further documentation. Thus Goajiro eeriį *wife* and eeci *husband* could conceivably have developed out of *ireyuni and *ireši respectively, and so have contained Goajiro -eyu *mother* and -ši *father*, together with a morph meaning *child*. But a sure Goajiro cognate of Lokono ire- and Island-Carib ira- *little one or child*, found in its ahappira *finger* where it enters into composition with ahappu *hand*, shows no metathesis; and G eeriį *wife* might equally well be related to G hiieer *woman*, G eeci *husband* be a cognate of Paraujano eiy(e) ∼ eic and Island-Carib eiéri, both meaning *man*. Similarly, Adzaneni iniri *husband* and (also Arequena, Cariaia, Carutana, Catapolitani, Siuci, Yucuna, Piapoco) inu *wife*, Mandauaca yu *wife* and (also Caouiri and Piapoco) niri *husband*, might well be shortened forms of one-time teknonyms (inu < *innu < *nindu < *ani + ndu); but they might almost as well have developed out of *inari and *inaru, forms similar to which are attested, with the meanings *man* (or *person*) and *woman* respectively, for a number of Arawakan languages.

Similar forms belonging to cognate languages and having allied though different referents are not always related; but in that section of the Arawakan vocabulary that we are considering, their number is such that they cannot all be due to coincidence. Besides those already mentioned, cf. Moxo eseno *woman*, yeno *wife* and eeno *mother*; the last two possibly variant recordings of the same form, and likely cognates both of Adzaneni (et alia) inu, Mandauaca yu, meaning *wife*, and of Lokono -iu, Passé aiñu (< *ani *child* + n(d)u) meaning *mother*. And since Yavitero -(i)-tanmi *child* is almost certainly cognate with its equivalent -(i)tani of closely related Baniva (which has: -ruani *father*, -surami or -surüani *mother*), it may be legitimate to compare Manao imiri *husband* with its Adzaneni equivalent, iniri, discussed above.

On the other hand, in view of Manao -nyaru *sister* and -eyeri *brother*, it seems unlikely that the same language's -ero *wife* (cf. Palicur ero *woman*) and irinali or herenari *man* (cf. Ariti ina *man*, Maipure ina *mother*) should be true cognates of Island-Carib hįaru *woman* and eiéri *man*.

Lokono 'umükűttü *einer Mannsperson*

*Schwiegermutter*" and "úmadukúrti *einer Manns- oder Frauensperson Schwiegervater*" clearly contain "akŭttŭhŭ *die Grossmutter*" and "adukutti *der Grossvater*" of the same record; and it has been suggested that "uma *mit*" is the first member of these compounds, which would then mean, more literally, *co-grandmother* and *co-grandfather*. However, it would seem more plausible on semantic grounds to relate this first member to a form meaning *child*, such as may be found in Yavitero -(i)tanmi and Campa -tomi *child*, and perhaps in the stem of "emeŭdun *gebähren*" of Lokono itself. From Cariban Karina (see now first paragraph of this note), Island Carib borrowed, inter alia: "iménouti, imenti *belle-mère d'un nouveau marié*", "imetámoulou *beau-père d'un jeune marié*" and "ibálimoucou *gendre*"; which clearly contain borrowed (only into the men's speech so far as the first two are concerned) "ínouti *grand-mère*", "itámoulou *mon grand-père*" and "ibáli, ibágnem, *petit-enfant, petits-enfans*". But while Karina ïme means only *my child* and consists of a prefix ï- *my* together with a bound stem, Breton's "im", which he translates in different contexts by "*fils*", "*fruit*", "*graine ou semence*", "*oeuf*", is a simple form that takes inherited Arawakan person-markers to indicate possession. I therefore suggest that Island-Carib "im" (modern -į ∼ hį) is, in spite of some convergence, also inherited and to be added to the list of Arawakan forms referring to *child*.

Lokono "íttiju *einer Frau Schwiegertochter*" and "íttiti *einer Weibsperson Schwiegersohn*" seem to be cognate with Island-Carib "ítignon, nhítignonum, *la bru appelle ainsi sa belle-mère, & la belle-mère son gendre*" (the second entry has the personal prefix of 3rd pl., nhA-, and a pluralizing suffix) and ítiti *son-in-law* (cf. third items in: "*son gendre* lítan, libálimoucou, f. lítiti" and "les belles-mères . . appellent leurs gendres: nitignon, nitan ou nititi"). At first glance it would seem that these terms contain, respectively, Lokono -iu ∼ úiu *mother* and -ti ∼ íti *father*; in which case their first members should refer to a *grandchild*. The fact that I can find elsewhere in Lokono and in Island Carib no such form as iti- with that or an allied meaning does not necessarily invalidate this interpretation (cf. what has been said of -tu *mother* in Lokono iretu *wife*). What does seem to render it unacceptable is the difference between the first terms' reference in these two languages: (woman's) SW in Lokono, (woman's) HM or DH in Island Carib. (It may be noted that the Lokono term for *husband's mother* and the Island-Carib term for a woman's *son's wife* appear to cognate derivatives of a verb *to tie*, and hence to mean something like *ally*.)

But another interpretation is possible and, I think, probable. We have seen that likely cognates in different Arawakan languages may refer in one case to *wife*, in another to *mother*; and in Lokono itself we find, besides "úju *Mutter*", "tuju *die grosse von einer Art Dinge*: beju uju *ein grosser Hirsch*, hime uju *ein sehr grosser Fisch*", "újuhu *die Vielheite*", "ujuhútti *ein Anverwandter* (sei es vom Vater oder Mutter wegen), daijuhútti; ujuhúttu *eine Anverwandtin*". A sure cognate of Lokono -iu ∼ úiu, in composition with éte *bottom, stock*, is found in Breton's Island-Carib "eteignon, eteignonum *progéniteurs, beaux-pères, belles-mères*", "mánba éteignon *mouche a miel* (m. *miel*; cf. Lokono "mábba uju *eine Biene*"), "*nos pères, parens, progéniteurs* hueteígnonum" and "keteignókêta *engendrer*" (k- *attributive*, -kêta *causative*). From this it appears that Lokono -iu ∼ úiu and Island-Carib -į(i)ų referred primarily to any progenitor or source of increase; and since [o] and [u] of Island Carib belong to the same phoneme, /u/, it is not improbable that the same stem should be present in that language's "ínhouti *élevé*", "ignouráali *il est bien haut élevé*", "ignourákêta-báe *élève-le, soulève-le*" (-ra is a verbalizer).

On the other hand, Lokono -ti (as opposed to -tu) of any singular noun always denotes a male, whether it be a stem meaning *father*, as in ireti *husband* (contrast iretu *wife*), or a suffix, as in ülikínti *grandson* (contrast ülikíntu *grand-daughter*); and the same appears to be true of these forms' etymological cognates in Island Carib. And since Lokono -iu is employed only as a stem (as in plural possessed daiúnuti *my parents*), it may perhaps be assumed that -ti of Lokono and Island-Carib ítiti (woman's) *daughter's husband* is—or was—also a stem, meaning *father*. But initial iti- of these terms probably had a wide reference similar to that of éte *stock* (see above), as is suggested by Breton's "*belle-mère*, . . la bru l'appelle: nitígnon" (i.e., *my mother-in-law*; in which, unlike elsewhere, he places the stress-accent on the second syllable).

In Island Carib, a man referred to his brother's wife, and a woman to her sister's husband, as niránių; while a man referred to his wife's sister, and a woman to her husband's brother, as uarániku. Now we know that father's brothers and mother's sisters were classed and termed with own father and mother; so that it is hardly surprising if niránių and uarániku should mean, respectively, *my child's parent* and *our child's parent* (*or elder*); cf. niráho *my child*, uaráho *our child*, and, as discussed above, -i(i)u *progenitor*. But instead of this last form, we find in the second term (uarániku) what appears to be a morph, -ku *parent*, identical with the same sequence in -úkusi(li) *father*, -úkusu(ru) *mother*; and if this should be correct, the first members of these compounds have a stem in -ran(i)-, rather than in -ra-. However, since neither IC iranor L ire- is a free form (cf. IC iráho *child*, plural "iráhim" > modern iráhoię *children*; L irenu *children*, without a singular), this may go back to an old *irani *child* (cf. Baniva and Manao itani), or, alternatively, represent a plural form, *children*.

The Lokono stems cited by Hickerson[2] as: (man speaking) -ronai- and (woman speaking) -ranomal- *sibling-in-law of opposite sex*, while neither equivalents nor cognates of the Island-Carib terms discussed in the preceding paragraph, do have some functional analogy to them, and may contain morphs that are cognate with their -ra-.

Lokono uribíti and uribíatu refer, respectively, to male and female siblings-in-law of like sex (a man's SiH or WBr, a woman's BrW or HSi); and they clearly have a morph in common with urihítiti (*a man's*) *daughter's husband*; cf. ítiti (*a woman's*) *daughter's husband*. But whether the remainder of these terms should be segmented into a stem -bi- ~ -bia- plus suffixal -ti/-tu, as is done by Hickerson, or into a stem -bi- plus one of two other stems, -ti *father* or -atu *mother* (cf. Canamare atu *mother*), may be questioned in view of Breton's Island-Carib "bítam *neveu*", "bitamoue níniboue *les enfans de mes neveux*". At any rate it is worth noting that L uribíti and uribíatu designate, under any system of preferential cross-cousin marriage, precisely the potential fathers and mothers of such nephews (a man's SiS and WBrS, a woman's BrS and HSiS; all other's being classed with own children); while the existence in Lokono of special terms for a man's *mother's brother's wife* (-iukatu) and for *husband's sister's son* (-itikiti) indicates the importance of these relationships.

With the exception of two terms given for a man's *sister's husband*, both borrowed from Karina, it is not at all clear what siblings-in-law of like sex were called in early Island Carib. At the present time (i.e., in the Central American and only surviving dialect), one of these borrowed terms, ibámu (Breton's "ibámoui"; and evidently related to the term for *grandchild*,

[2] See: Nancy P. Hickerson, Ethnolinguistic Notes from Lexicons of Lokono (Arawak), in IJAL 19. 181–90 (1953).

ibáli > ibári), has been extended to include a man's *male cross-cousin* and *wife's brother*, as well as *sister's husband*; while a woman now calls both *brother's wife* and *husband's sister*: 'nígatu' (n- *my*). The latter term is something of a mystery, both as to its ancestry and as to its semantic development; for Breton says of it in the mid-17th century: "nígatou, *c'est ainsi que les cousines appellent leurs cousins maternels lorsque leurs soeurs ne se marient pas avec eux; et les cousins en tel cas les appellent*: niouelle atonum." And he goes on to say that these terms are replaced, "en cas qu'ils se doivent prendre en mariage", by, respectively, "níkêliri" and "niouélleri".

Now "ouélle" *woman* and "ouekêlli" or "ouekélli" *man* (modern /uóri/ and /uogóri/; Breton's 'ê' regularly and his 'e' sporadically correspond to /o/ of the modern dialect) are men's words, borrowed from Karina; and the former is clearly present in two of the cross-cousin terms cited above, the last of which, though obsolescent, is still remembered as niuóriri *my FSiD*, man speaking. And the word for *man* similarly appears, though less clearly, to be present in Breton's "níkêliri", modern though obsolescent nógoriri *my MBrS*, woman speaking; while -ri is a suffix that occurs in the possessed forms of most nouns of Karin ancestry (so: némari *my path*, from óma *path*). I therefore suspect that -ígatu is, in origin, a Cariban compound containing a morph meaning *man* together with another, -atu **given up* (*released*), found also in "niouelle atonum" *my-woman *who-is-released*.

But however that may be, nígatu became in time a term of address or reference to: (in Dominica) any more or less distant male relative, and (among the Black Carib) a woman's sister-in-law. The latter semantic change is so extraordinary that I can understand it only if it took place at a time when this term had fallen into virtual disuse, and the need was felt, so far as the women were concerned, for some equivalent to Fr. belle-soeur and Eng. sister-in-law. The choice of nígatu may well have been influenced by its final syllable, which is the same as that of inherited nítu *my* (*elder*) *sister*; and folk-etymology may have related the two.[3]

DOMINICA, BRITISH WEST INDIES

## A BIBLIOGRAPHY OF THE SAINT FRANCIS DIALECT

GORDON M. DAY

This is an attempt to list all the original linguistic material which has been published in the speech of the Saint Francis Indians.[1] The term "Saint Francis Indians" is used here to designate the residents of the Indian village which was established on the Saint Francis River in Quebec sometime in the seventeenth century.[2] Published histories do not record the origin of the village. Charland cited baptismal records at Sorel as evidence that Indians were at Saint Francis in 1676.[3] Maurault[4] recorded a tradition that the Indians were living near their present location prior to the settlement of the Seigneur,

[3] It is of course conceivable that folk-etymology should in this case have been right. If Lokono -iukatu *mother's brother's wife* were to be analysable into iu- *mother* plus *-katu (*woman's*) *brother's wife* (cf. uribíatu, the term actually recorded for this relationship), it would then seem plausible to find a cognate of the latter form in Island-Carib nígatu *my sister-in-law* (woman speaking). But if so, the meanings given to this term in early and in recent Dominican Island Carib appear to be inexplicable.

[1] Much of this data has been gathered in the course of research made possible by grants from the Spaulding-Potter Charitable Trusts of Manchester, New Hampshire.

[2] This village has long been known to the Indians, and since 1916 to the Bureau de Poste, as Odanak *at the village*. It is located in Yamaska County, Quebec, on the eastern bank of the Saint Francis River, about six miles from its confluence with the Saint Lawrence River and adjacent to the Canadian village of Pierreville.

[3] Thomas M. Charland, Histoire de Saint-François-du-Lac (Ottawa, 1942), p. 16.

[4] J. A. Maurault, Histoire des Abenakis, depuis 1605 Jusqu' à Nos Jours (Sorel, 1866), p. 276.

Jean Crevier, which according to Sulte[5] took place in 1671. The Indians still have a tradition that there were twenty families living at Saint Francis in 1660,[6] and the probability of this is increased by the record of a Sokoki baptism in Three Rivers in 1658.[7] The village on the Saint Francis River has been confused with Saint-François-de-Beauce, which had an Indian population for a period during the eighteenth century,[8] and with the Mission of Saint-François-de-Sales, which was located at the falls of the Chaudière River ca. 1683–1706.[9]

The Saint Francis Indians, thus defined for a bibliographical effort, need not be regarded as an ethnic or linguistic unit. Although at present the Indians admit of only one dialect in the village, history shows that the band was formed by increments from several linguistic areas, and it would not be surprising if the works herein listed reflect that fact. Titles which deal with known or supposed constituent groups before their arrival at Saint Francis are not given, but those containing data obtained from former residents of the village are arbitrarily included without establishing their antecedents and length of family residence at Saint Francis.

No attempt has been made to list any but first editions. Reprints, citations, and extracts which are known to be copies are omitted. In order to present all the Saint Francis material in one list, it has been necessary to repeat a few titles found in other bibliographies. All but two of these, however, appear for the first time with correct annotations. Major works are listed chronologically by publication date. Minor works are listed alphabetically by author. The writings of native authors are indicated by an asterisk. The names of informants or other sources of the data are given, when known, to assist students in assessing the value of the data and in identifying sub-dialects. While the writer's intention has been to produce a complete bibliography, he would be mildly astonished to find that he had succeeded, and additional items falling within the scope of this bibliography will be welcomed.

It may be noted here that manuscripts pertaining to this dialect amount to six or seven times the volume of the published materials, and most of them were written in the eighteenth century, while publication did not commence until 1809. Microfilms of these manuscripts are being assembled in the Abenaki Collection of Baker Library, Dartmouth College, and a listing of them is intended.

The abbreviations used are familiar to readers of the International Journal of American Linguistics excepting perhaps the following:

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|---|---|
| AAA-M | American Anthropological Association, Memoirs. |
| AJP | American Journal of Philology. |
| APS-P | American Philosophical Society, Proceedings. |
| BRH | Bulletin des Rechereches Historiques. |
| ICA-P | International Congress of Americanists, Proceedings. |
| JAF | Journal of American Folk-Lore. |
| MHS-C | Massachusetts Historical Society, Collections. |

### MAJOR WORKS

* Wzọkhilain, P. P. 1830. Wọbanaki kimzowi awighigan, P. P. Wzọkhilain kizitokw. Boston. 90 pp. [A primer which

[5] Benjamin Sulte, Mélanges Historiques 1.82 (1918); 15.90 (1929).

[6] Obtained from descendents of Louis-Napoleon Obomsawin.

[7] Sulte, 15.94.

[8] Honorius Provost, Les Abénaquis sur la Chaudière, Publications de la Société Historique de la Chaudière, No. 1 (St-Joseph-de-Beauce, 1948), pp. 13–27.

[9] This confusion has been assisted by the fact that the Mission of Saint-François-de-Sales was removed from the Chaudiere about 1705–1706 (Charland, p. 74) to the Saint Francis River where it is at the present time.

Pilling[10] erroneously called Penobscot. Prince[11] and Hallowell[12] corrected this error, but it was subsequently copied by Eckstorm[13] and the Newberry Library.[14] The author was "... a native Abnaki, educated in Moor's Indian school, Hanover, N. H., who maintained a mission-school at St. Francis from 1830 to 1858. Ozunkherhine[15] spoke and wrote English with ease and accuracy, and—living among and writing for his own people—his authority is of the highest, on all that concerns the western Abnaki dialect."[16]]

* Wzǫkhilain, P. P. 1830. Wawasi lagidamwoganek mdala chowagidamwoganal tabtagil, onkawodokodozwal wji pǫbatami kidwǫgan. Boston. 35 pp. [Selected Scriptural texts and short sermons based on the Ten Commandments. This work was also mistaken by Pilling for Penobscot. The orthography used in Wzǫkhilain's writings was based on that proposed by John Pickering as a uniform method for writing Indian languages.[17]]

(Desfossés, Basilide.) 1832. Kagakimzouiasis ueji Uo'banakiak adali kimo'gik aliuitzo'ki Za Plasua. Quebec. 44 pp. [A Catholic catechism which was attributed to Wzǫkhilain by Pilling on the authority of Trumbull. The orthography, however, is totally different from that used in works known to be Wzǫkhilain's, and it is highly probable that this is the catechism which Father Bellenger caused to be prepared by Basilide Desfossés and published at Quebec in 1832.[18] Desfossés was schoolmaster at Saint Francis.]

* (Wzǫkhilain, P. P. 1845.) St. Mark. (Montreal) 58 pp. [The Gospel of St. Mark in the Saint Francis dialect. Pilling attributed this work to Wzǫkhilain, but apparently he had not seen Laurie's statement that, "The Gospel of Mark was translated by Peter Osunkerhine, a missionary of the Board, into Abenaquis, his native tongue, and printed at Montreal in 1845."[19]]

* Masta, Henry Lorne. 1883. P8batammi linto8ganal ta sall8mno8ganal wji kw8ih8mgi Kchi Niwaskw. Montreal. 19 pp. [A Protestant hymnal. The contents are practically identical with the Tahamont manuscript[20] and with proof sheets in Baker Library Archives, which are marked "Masta" and there assumed to be the work of Wzǫkhilain (also called Peter Masta). Only one copy of this work is known to the writer.]

* Laurent, Joseph. 1884. New familiar Abenakis and English dialogues. Quebec. 230 pp. [Lexical and grammatical material, conversational phrases, and place name etymologies by a former chief and schoolmaster whom this generation remembers as an authority on the language. The most widely available book in this dialect. The Laurent family at Odanak possesses a copy corrected by the author for a revised edition which was not printed.]

Prince, J. Dyneley. 1901. The modern dialect of the Canadian Abenakis. Miscellanea Linguistica in Onore di Graziado Ascoli, 343–362. Torino. [A grammatical sketch treating phonetics and noun and verb morphology and presenting a table of the verb *to see* with incorporated pronominal elements. Prince commenced the study of

[10] James C. Pilling, Bibliography of the Algonquian Languages (Washington, 1891), p. 539.

[11] J. Dyneley Prince, The Penobscot Language of Maine, AA 12.202.

[12] A. Irving Hallowell, Recent Changes in the Kinship Terminology of the St. Francis Abenaki. ICA-P 22.ii.102, Note 20.

[13] Fannie Hardy Eckstorm, Indian Place-Names of the Penobscot Valley and the Maine Coast, University of Maine Studies, Ser. 2, No. 55 (Orono, 1941), p. 248.

[14] A Bibliographical Check List of North and Middle American Indian Linguistics in the Edward E. Ayer Collection, (Chicago, 1941).

[15] Both Wzǫkhilain and Osunkherhine were written by the author himself.

[16] James Hammond Trumbull, Notes on Forty Versions of the Lord's Prayer in the Algonkin Languages, APA-T (1872), p. 137.

[17] Missionary Herald (Boston, 1837), 32. 268.

[18] Charland, p. 235.

[19] Thomas Laurie, The Ely Volume (Boston, 1885), p. 229.

[20] In the BAE Archives.

Abenaki before 1888 and carried it on for several years in Canada and Northern New York.[21] Later he wrote, "Personally I could talk Abenaki nearly as fast as English once, but have lost my conversational fluency of late years."[22] His New York informant was probably Mitchell Sabattis, but his Canadian informants are nowhere identified.]

Hallowell, A. Irving. 1928. Recent changes in the kinship terminology of the St. Francis Abenaki. ICA-P 22.ii.97–145. [Kinship terms recorded from Henry Masta and other aged informants. Hallowell was the first to call attention to non-Abenaki components in the lexicon of this dialect.]

*Masta, Henry Lorne. 1932. Abenaki Indian legends, grammar, and place names. Victoriaville, P.Q. 110 pp. [A valuable little book written by a man who was for 20 years chief and for 31 years schoolmaster at Saint Francis. Of him Hallowell wrote, "He is recognized as a master of Abenaki as a medium of expression and at the same time possesses a philological detachment from it unequalled by any other member of the community."[23]]

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[21] AA 4:18.

[22] George McAleer, A Study of the Etymology of the Indian Place Name Missisquoi (Worcester, Mass., 1906), p. 38.

[23] Kinship Terminology, p. 103.

[24] See Charles G. Leland, The Algonquin Legends of New England (Boston, 1885), p. 220.

[25] See below.

"the Indians at St. Français" with translations.]

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[26] Charland, pp. 298–299.

[27] Charles A. Philower, personal communication, November 14, 1959.

[28] Although this is bound in Volume 1 of Hemenway's Vermont Historical Gazetteer, 1867, it appears from the editor's preface and from Edward D. Collins' Foreward to Volume 4 of the Centennial Edition of Robinson's works (Rutland, Vt., 1934) that it was first published in 1860.

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(Roubaud, Rev. P. A.)[30] 1900. Letter from Father * * *, missionary to the Abnakis, Saint François, October 21, 1757, *in* Jesuit Relations and Allied Documents, Thwaites ed., (Cleveland, 1896–1901) 60.90–203. [Words.]

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Thoreau, Henry David. 1858. Chesuncook. The Atlantic Monthly 2.305–317. [Maine place names from Tahmunt Swasen.]

Vassal, H. 1885. List of names of certain places in the Abenakis language. Canadian Department of Indian Affairs, Annual Report for 1884, Pt. 1, 26–31. [Quebec and Vermont place names from Joseph Laurent, Lazarre Wasanminett, and Henry Masta. Poorly transcribed but a useful record.][31]

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[29] An unsigned essay generally known to be Robinson's work.

[30] The writer of the letter was identified by Thwaites and can be identified from internal evidence as Roubaud, the assistant and later the successor of Father Aubéry.

[31] The Abenaki words which appeared in the works of Robert G. Latham between 1846 and 1862 are of uncertain origin. Gatschet, APS-P 23.426, thought they had been collected by W. E. Cormack or his attendents. This would date them before 1829. Use of the name "Benekee" suggests the St. Francis band, but the usage may be Gatschet's, rather than Latham's. Cf. F. W. Hodge, Handbook of American Indians North of Mexico, BAE Bull 30 (Washington, 1907–10), 1.5.

## SYNONYMS AND GLOTTOCHRONOLOGY

A. I. SAMARRAI

D. H. Hymes[1] has objected to considering as "retained" those 22 items in my list[2] which can be translated from English into more than one word in Classical Arabic. Mr. Hymes maintains that my procedure has given each item in the list twice (and in one case three times) as much chance as the other test items to be a retention.

We must note that the 22 items include only those items where there is no unanimity in choice among the three tested dialects

[1] D. H. Hymes. On the Rate of Morpheme Decay in Arabic. IJAL 25:267–269, 1959.

[2] Alauddin Ismail Samarrai. Rate of Morphemic Decay in Arabic. IJAL 25:68–70, 1959.

from the Classical Arabic equivalents. Since other items also have synonyms in Classical Arabic, it is possible that by subjecting other Arabic dialects to the test, the number of the items in the list in question may exceed twenty-two. Furthermore, had each dialect been taken separately and subjected to our test, the cognates only would have been chosen and the controversial list would have been eliminated altogether. The rate-constants, under such testing procedures, would remain as 0.8923 for Egyptian, 0.9118 for Iraqi and 0.9267 for Jordanian.

If we accept the assumption that translating these items into Classical Arabic gives synonymous equivalents, we should consider the two or three words which translate a single item from English as being statistically identical. Furthermore, to regard the discriminating behavior of the Arabic dialects as a chance procedure is to oversimplify the matter. Arabic was introduced mainly to peoples who had already been speaking Semitic or Hamitic languages. These languages contain a great number of words which have corresponding Arabic cognates. The choice of a certain word by an Arabic dialect had been, naturally, influenced by the characteristics of the Semitic or Hamitic vernacular in use prior to the introduction of Arabic. It is outside the scope of lexicostatistics to determine the manner by which such selection had been achieved. But it should be pointed out that although the choice of items under such an influence is, obviously, culture-bound, the items themselves are still culture-free as far as the use of "culture-free" in glottochronology is concerned.

UNIVERSITY OF WISCONSIN

## A NOTE ON THE NAVAHO WORD FOR COYOTE[1]

HERBERT J. LANDAR

**1.** While it is more insulting, perhaps, to call someone č'íidii *ghost* or gáagii *crow*, it is no small insult in Navaho society to call someone mą?ii *coyote*. Coyote is a disreputable character in Navaho folklore, and in the folklore of other tribes. He does nasty things. It is probable that his name is derived from a relative expression ending in -ii *the one* (*who or which . . .*) and a stem mą?- whose meaning is the subject of this note.

**2.** Haile translates mą?ii as *roamer*:

> It appears that coyote would occasionally visit here with talking god, the inner form of dawn. Here it seems he would remark that he wanted to be called holy young man, and this (change of name) probably was the purpose of his frequent visits, *because he was ashamed of the name roamer by which he was known*. The young man was told of this here: "Wonder why he says this! Coyote, the first scolder, comes here occasionally saying this" he was told. "He runs everywhere without considering anything sacred! Does this roamer consider himself fit to have the same name as I have? Does he threaten to rob me of my name?" he said.[2]

But *roamer* is a surprising name to be ashamed of, in a culture that values motionful activity and relates it to power.[3] Coyote, it is true, merits odium for his maleficence, and perhaps his name would be detested no matter what it was. On the other hand, the stem mą?- may have had a Proto-Apachean ancestor whose meaning had nothing to do with roaming. The meaning is lost today, and mą?- is a cranberry morpheme, just like dól- in dólii *bluebird*. I have been unable to find any verb with a stem -mą? *roam*. Native speakers offer no folk etymologies. A careful reading of the Ghostway Ritual, together with comparative evidence, may support a new interpretation.

The italicized line, in the orthography used in this note (following Hoijer's usage),

[1] For support and assistance during the writing of this note I am grateful to the Social Science Research Council and to the Department of Public Health and Preventive Medicine of Cornell University Medical College.

[2] Berard Haile, *Legend of the Ghostway Ritual in the Male Branch of Shootingway* (Saint Michaels, Arizona, 1950), verse 116, pp. 139–140.

[3] See John Ladd, *The Structure of a Moral Code* (Cambridge, 1957), p. 221.

runs bíźi?šíį yaayáńzingo mą?ii bi?di'nîo. A translation which gains vividness at the expense of elegance is: *it is this way, he has shame in mind about his name, it seems, since they say* mą?ii *to him.*[4] We should not consider this line out of context. It follows an episode in which Coyote is identified with the evil force of witchcraft and in which his stench is exploited for circumstantial realism and especially for symbolic or allegorical effect. Coyote's stench is as contaminating as his character is morally foul. It cannot be extinguished without supernatural help.

Coyote bewitched Holy Young Man, casting his skin upon him. The spell was broken when the five winds (white, yellow, blue, black and sparkling) freed Holy Young Man by serial passage through their hoops, a passage freeing head, then chest, then hips, then ankles, and finally his whole body: disosę́ę binákaa góne? č'óxožńłgo?go t'áá ?áadi xa?é?ę́ę dahyołcos žin, *When he thrust him out through the said sparkling one, his former (coyote) garment stayed hanging there (on hoop).*[5] Later, Holy Young Man blew Coyote's skin back where it belonged, and Coyote, who had been hunting antelope while misusing his victim's identity and belongings, dropped the hero's stalking antlers, quiver, arrows and clothing, and ran away.

After this had happened he went over to the said clothes, quiver, and stalking antlers, but found that their odor made any close approach utterly impossible for him. . . he too stank in like manner.[6]

Deities tried to remove the stench. Born For Water hung the belongings on a tree and asked for continual rain to wash them for four days.

So it seems after it had begun to rain and the water flowed, foam had collected. Whenever lightning flashed zigzag lightnings were flashing over these foams, so he was bathed with these. . . And when word was also taken to the thunder people they gave him another bath, which made it twice. Then it seems word was again taken to the socalled water people who again bathed him but, although bathed three times, he had the same odor as before.[7]

Finally the twin heroes Born For Water and Monster Slayer went to Fieldrat Man for help; he prescribed a medicinal lotion made with a plant called łééécoh biliž halčiní *the one which smells of fieldrat's urine.*

This then was employed for his bath and that finally wiped it from him, it took effect on him, he got to be free of the odor. With this he had evidently received four baths and now finally he was free of the bad odor.[8]

Perhaps in prehistoric times Coyote's name was clearly related to his stench.

**3.** There are a number of forms in Apachean (Southern Athapaskan) languages (e.g. ma?- of Chiricahua ma?ye and Mescalero mą?ye *coyote*) which seem to be cognate with Navaho mą?-; and Mescalero also has mai *coyote*, which recalls main *weasel* in Kato, a Pacific coast Athapaskan language.[9] There are semantic grounds for linking Kato main and the Apachean forms with a verb stem of Chipewyan, a Northern Athapaskan language: -mą́ *stink.*[10]

Are there grounds based upon systematic correspondences of phonemes? Where the Navaho and Chipewyan forms are concerned, I think there are. Stem-final -n disappears with compensatory nasalization of a preceding vowel under certain conditions in Chipewyan, as in Navaho. For Chipewyan, "Ath. -n+' remains in most cases as -n. . . On the other hand it is lost in

[4] Haile, p. 139; bí- *his*, -zi? *name*, -šíį *it seems*, yaa- *he about it*, yá- *shame*, ńzin *he has it in mind* (-zin *think, have in mind*), -go (or -o) *being thus*, bi?di'ní *it is said to him* (-ní *say*).

[5] Haile, p. 71.

[6] Haile, p. 79.

[7] Haile, pp. 79–80.

[8] Haile, p. 81. Further supernatural action is needed, however, to free his belongings of their overpowering stench.

[9] See P. E. Goddard, Elements of the Kato Language, *UCPAAE* 11.6 (1912); cf. Kato mai *badger*, Frank Essene, Culture Element Distributions: XXI Round Valley, UCAR 8: 1.86 (1942).

[10] Fang-Kuei Li, A List of Chipewyan Stems, IJAL 7. 127 (1933).

many cases particularly in the verb stems. . ."[11] A glottal catch may be lost, with corresponding shift of tone from low to high, in Chipewyan, but may remain in Navaho. Compare Chipewyan kún *fire*, Mattole koŋ', Beaver kon', Navaho kǫ?; Chipewyan tθə́n *star*, Mattole, Hupa ciŋ', Navaho sǫ?.[12] Both Chipewyan -má *stink* and the mą?- of Navaho mą?ii *coyote* can be traced to a Proto-Athapaskan stem *-man': Chipewyan -má < *-mán < *-man'; Navaho mą?- < *-man'. The Athapaskan vocalism has not been fully worked out yet, and this equation of -má and mą?- must be regarded as tentative. The possibility cannot be dismissed, however, that the Navaho word for coyote is a noun derived prehistorically from a relative expression meaning *the one who stinks, the stinker*.

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## BUREAU OF AMERICAN ETHNOLOGY: AN ANNOUNCEMENT

The Bureau of American Ethnology in collaboration with the American Philosophical Society is making a rough census of the present number of speakers of North American Indian languages. Questionnaires are being mailed to anyone who has had enough contact with an Indian group to be able to estimate the number of speakers of the native language within the broad categories 1–10, 11–100, etc. If you have such knowledge for any group in North America and have not received a questionnaire, you are urgently requested to send your name to Wallace L. Chafe, Bureau of American Ethnology, Smithsonian Institution, Washington 25, D. C.

## ABSTRACTS AND TRANSLATIONS: AN ANNOUNCEMENT

The editors of IJAL announce a new section, Abstracts and Translations, under the editorship of Dell H. Hymes.

The primary purpose of the new section will be to abstract articles appearing in other journals which concern (1) American Indian languages, (2) anthropological linguistics, (3) theoretical points of general interest. An attempt will be made to cover the leading linguistic and anthropological journals in Europe, America—including Latin America—Africa and Asia. All abstracts will be written in English, regardless of the language in which the original journal article was written.

In addition, articles of extraordinary interest appearing in a language not generally accessible to scholars in the western tradition, will be given more detailed abstracts and, in some instances, will be translated in their entirety.

The editors earnestly solicit the collaboration of scholars in the preparation of abstracts of any journal articles they consider relevant for the new Abstracts and Translations section of IJAL. All abstracts and correspondence relating to Abstracts and Translations should be sent to Dell H. Hymes, Kroeber Hall, University of California, Berkeley 4, California.

[11] Fang-Kuei Li, Chipewyan Consonsants, The Ts'ai Yuan P'ei Anniv. Vol. (Supplementary Vol. I, Bull. of the Inst. of History and Philology of the Academia Sinica; Peiping, 1933), p. 458.

[12] Li's comparisons have been supplemented by forms from Harry Hoijer, The Chronology of the Athapaskan Languages, IJAL 22. 219–32 (1956).

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